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CHICAGO, ILLINOIS

CITY RESIDENTIAL LAND DEVELOPMENT

PUBLICATIONS OF THE CITY CLUB OF CHICAGO

CITY RESIDENTIAL LAND DEVELOPMENT

STUDIES IN PLANNING

COMPETITIVE PLANS FOR SUBDIVIDING A TYPICAL QUARTER SECTION OF LAND IN THE OUTSKIRTS OF CHICAGO

EDITED BY

ALFRED B. YEOMANS

LANDSCAPE ARCHITECT

THE UNIVERSITY OF CHICAGO PRESS

CHICAGO, ILLINOIS

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PREFACE

THE environs of our large cities constitute one of the most promising fields for the work of the city planner. Within the built-up portion of the city changes in the street plan and the creation of open spaces are enormously expensive and difficult. On the other hand, every large city includes within its limits large areas of unimproved or only partially improved land where the city planner, real estate operator, and others may work practically unhampered by the ideas or lack of ideas of their predecessors.

There is increasing evidence of a tendency in this country to take advantage of these opportunities to intelligently direct and control the growth of cities. The purely mechanical extension of existing street systems is giving way to scientific methods of land development based on a careful study of the probable economic, social, and esthetic needs of the prospective inhabitants.

The present volume, consisting mainly of plans submitted in a competition held by the City Club of Chicago in 1913, is issued in the hope that it may help to stimulate interest in the more intelligent planning of the outlying portions of large cities.

THE EDITOR.

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I. THE PROGRAM OF THE COMPETITION

PROGRAM OF A COMPETITION

with Cash Prizes
for the procuring of a
SCHEME OF DEVELOPMENT
for a Quarter-Section of Land
within the Limits of the
CITY OF CHICAGO, ILLINOIS

The Problem

The City Club of Chicago is preparing to hold a Housing Exhibition to open at the club building March 7, 1913. As a stimulating and constructive feature of that exhibition it is desired to have displayed plans showing the possibilities, according to the best practice of the present day, for laying out and improving, for residence purposes, areas in Chicago now unoccupied. The City Club has, therefore, asked the Illinois Chapter of the American Institute of Architects to draw up a program, addressed particularly to building and landscape architects, engineers and sociologists, for a competition for plans for laying out, as a residence district, a typical area in the outskirts of the city. The Chapter has drawn up such a program, and Mr. Alfred L. Baker, President of the City Club, has offered $600 for prizes for such plans. The program is as follows:

Program

A tentative city plan has been proposed for Greater Chicago. It deals especially with the broad structural features of the city framework and contemplates a long period of time for its execution. Meanwhile the unoccupied land in the outskirts of the city is being rapidly built up with homes without that intelligent direction which is necessary for the good of the city and its population. Recreation centers and parks are not being located until population has made them absolutely necessary, and then at large cost for the requisite land. Nor are the essentials for good housing and for neighborhood institutions being recognized.

Object of Competition

The object of this competition is to extend information and awaken increased interest concerning the matter of laying out, for residential purposes, unbuilt areas in the City of Chicago in an improved manner, showing the essentials of good housing in its broadest sense, the best methods of subdivision of residential land, the best disposition of space for parks and recreation centers, the most practical width and arrangement of roads, the most convenient location of stores and of public or semi-public grounds and build-

ings, the most desirable provisions for house yards and gardens and the proper density of population to be provided for.

It is also hoped that some of the plans proposed in this competition may actually be adopted as the basis for developing some of the vacant quarter-sections in the outskirts of the city.

Site

For good reasons it has been determined that the area for the laying out of which plans are to be submitted in this competition shall be, not a precisely located, but an imaginary or an assumed site, as follows:

The site comprises a quarter-section of land assumed to be located on the level prairie about 8 miles distant from the business district of the City of Chicago. The tract is without trees or buildings and is not subdivided. The surrounding property is subdivided in the prevailing gridiron fashion as indicated by plat on opposite page. It is assumed that within a mile of the site are to be found numerous scattered instances and several groups of ordinary frame and brick houses such as prevail on the southwest, the west and the northwest outlying sections. Many of the larger industrial plants that are located or are being located west and southwest of the city are distant from ½ mile to 4 miles from the site. Many of these plants can be reached from the site on foot or by car lines, with or without transfer, within twenty minutes.

Transportation

The site is served by street car lines on two sides, and there is a possibility of street car lines on the other two sides.

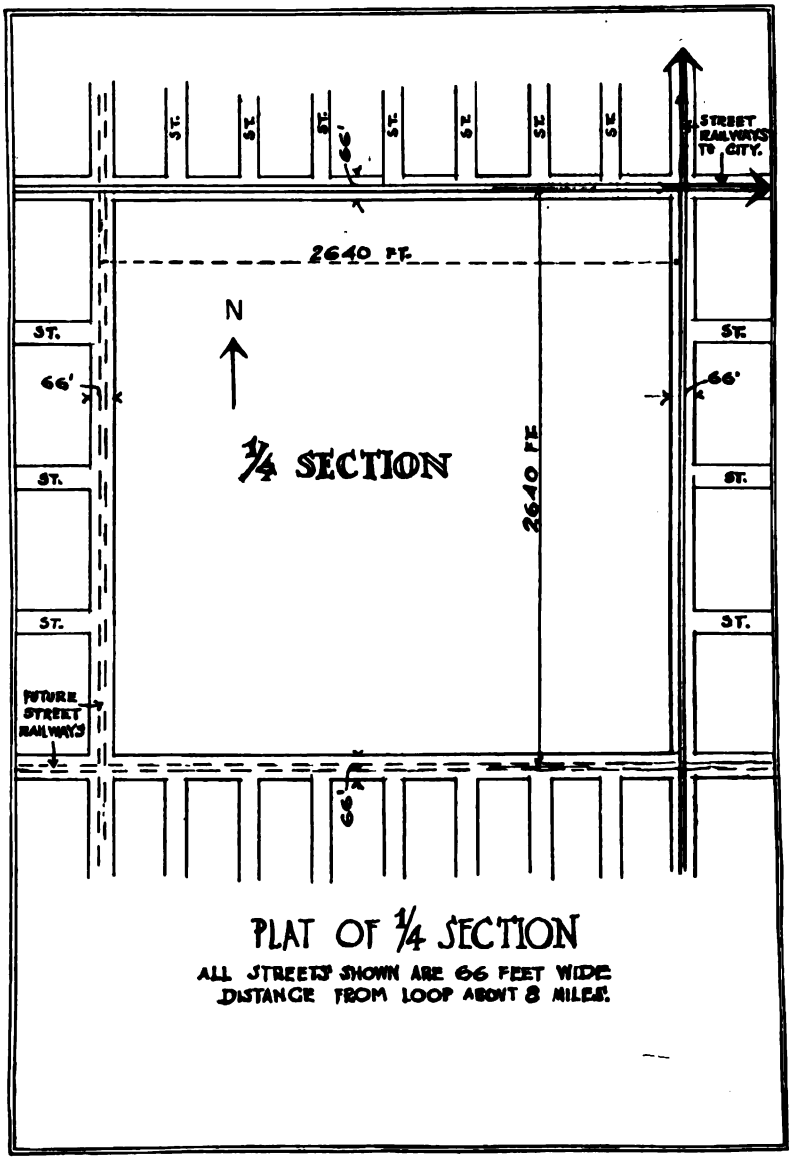
The site as shown on the plat is assumed to lie in the southwest quadrant of the city, and is served by street car lines on the east side and the north side. A passenger from the site may, by starting north on one of these lines or east on the other, reach the loop district, by transfer if necessary, in about 45 minutes.

Any competitor may, if he chooses, assume the site to lie in the northwest quadrant, in which case he would modify the plat by showing the two existing street car lines as on the south and east instead of the north and east sides of the site; and a passenger would then reach the loop district from the site in like time by starting south on one of these lines or east on the other and transferring, if necessary.

Drawings

Each competitor will submit two drawings: First a plan, drawn to a scale of 80 feet to the inch, showing the streets as proposed to be laid out in respect to direction, width, grass plots, fore-gardens or plantation of trees along them; the size and arrangement of lots; the location of dwellings upon them; the proper provision of gardens; the provision of public open spaces other than streets; the designation of spaces for the business, recreational, educational, religious, administrative and other social requirements of the prospective inhabitants, and any other features belonging to a proper development of the site as a residential quarter according to the best practicable standards for the location.

Second—Each competitor will submit a bird's-eye perspective of the



PLAN OF A TYPICAL QUARTER SECTION IN THE OUTSKIRTS OF CHICAGO

area, or some portion of it, in its proposed developed condition, which shall not exceed 20 inches by 36 inches inside the border lines, or an equivalent area.

Both drawings are to be rendered in pen and ink, or pen and ink with monotone wash. They are to be made suitable for half-tone reproduction.

Density of Population Plans are not to provide for a population greater than 1,280 families for the quarter-section.

Ordinances Competitors will assume that all present city ordinances affecting building within the fire limits will prevail in this quarter-section.

Discussion by Competitor Each competitor will submit with the drawings a typewritten statement giving the following data concerning his plans, namely:

(1) The number and sizes, in street frontage and superficial area in square feet, of lots for dwellings.
(2) The number of families to be accommodated.
(3) The number of feet of public sewers proposed.
(4) The number of square yards of street pavement proposed.
(5) The number of square yards of sidewalk proposed.
(6) Percentage of total site in streets.
(7) Percentage of total site in other public spaces.

Each competitor is also invited to explain and discuss, as fully as he may choose, the general purposes, policies or features represented in his solution of the problem.

To Whom the Competition is Open Any person or group of persons may submit drawings and statement in this competition.

Prizes Three prizes will be awarded, the first of $300, the second of $200 and the third of $100, for the best, second best and third best sets of plans submitted, and honorable mentions will be made as shall be determined by the jury.

Jury Judgment is to be rendered by a jury of five chosen by a joint committee of the City Club and the Illinois Chapter of the American Institute of Architects.

Date of Submission of Drawings The drawings are to be delivered to the office of the City Club, 315 Plymouth Court, Chicago, at or before noon of March 3, 1913, addressed to "Housing Competition, City Club, Chicago."

Judgment To each set of drawings there must be attached a plain opaque sealed envelope containing a card bearing the name of the author or authors.

The award will be announced on or before March 10, 1913.

Drawings to be Exhibited It is intended that the drawings submitted shall be shown in the Housing Exhibition mentioned.

Persons or groups of persons desiring to enter the competition will please send notice as early as may be to the address below. A meeting, to which persons sending such notice will be invited, will be held about January 4, to talk over the competition and any questions which may arise respecting it among those intending to participate.

Literature

As a convenience and aid to those who shall take part in this study, the City Club will endeavor to have, on or about December 26, for sale to entrants, at prices indicated, plus postage and duties where necessary, a limited number of sets of the following books and pamphlets, describing the progress of the garden city and garden suburb movement, especially in Great Britain and Germany, namely:

1. "Nothing Gained by Overcrowding," by Raymond Unwin. Published by Garden Cities and Town Planning Association, London, 1912. 6c.
2. "Forest Hills Gardens." Published by the Russell Sage Foundation, New York City, 1911.
3. "Housing and Town Improvement." Published by the Housing and Town Planning Association of Ireland, Dublin, 1912. 25c.
4. "The Bournville Village Trust." Published by the Bournville (England) Village Trust, 1911.
5. "Typical Plans of the Bournville Village Trust." Published by the Bournville Village Trust, 1911. 25c.
6. "Garden Suburbs, Villages and Homes." Published by the Co-partnership Publishers, Ltd., London, 1912. 12c.
7. "The Pioneer Co-partnership Suburb." Published by the Co-partnership Publishers, Ltd., 1912. 6c.
8. "Co-partnership in Housing." Published by the Co-partnership Publishers, Ltd., 1911.
9. "Garden Suburbs, Town Planning and Modern Architecture." Published by T. Fisher Unwin, London, 1910. 25c.
10. "The Garden City—Port Sunlight," by M. Georges Benoit-Levy. Translated from the French, 1904.
11. "The Buildings Erected at Port Sunlight and Thornton Hough." Published by Lever Bros., Ltd., Port Sunlight, Liverpool, 1905.
12. "The Cheap Cottage and the Small House," by J. Gordon Allen. Published by Garden City Press, Ltd., Letchworth, England, 1912. 36c.
13. "Die Deutsche Gartenstadt-Bewegung." Published by the German Garden City Society, Berlin-Schlachtensee, 1911. 40c.
14. "Die Deutsche Gartenstadt Muenchen-Perlach," by Berlepsch-Valendas and Hansen, 1910.
15. "Bodenpolitik und Gemeindliche Wohnungsfürsorge der Stadt Ulm," by Berlepsch-Valendas. Published by E. Reinhardt, Munich, 1911. Price, 50c.
16. "Can the Present-Day Evils of the Living Conditions in Great Cities Be Remedied?" by Albert Weiss. Published in German by Carl Heymanns, Berlin, 1912.

Inquiries

Inquiries for further information should be addressed in writing to "Housing Competition," City Club, 315 Plymouth Court, Chicago. The answers will be in writing and will be forwarded, with the questions, to all known competitors

December 21, 1912.

GEORGE E. HOOKER,
Civic Secretary.

II. THE REPORT OF THE JURY

NOTE: The following gentlemen constituted the jury: Messrs. John C. Kennedy, Housing Expert; John W. Alvord, Engineer; Jens Jensen, Landscape Architect; George W. Maher and A. W. Woltersdorf, Architects. Mr. Edward H. Bouton, Director of the Roland Park Company, Baltimore, acted as consultant.—*The Editor.*

BEFORE discussing the merits of the various plans submitted in this competition we wish to state briefly the method followed in arriving at our conclusions. We observed at the outset that the 39 sets of plans could be arranged according to type in about five different groups. First, there were those based upon the so-called gridiron pattern; second, a group not following any fixed design, but rather heterogeneous in their make-up; third, a number which were very systematically organized, with frequent repetitions of a characteristic unit or block; fourth, plans of the beaux arts type, presenting fine vistas, boulevards, spacious parks, and sites for imposing buildings; fifth, a class of plans showing unity and system in composition, yet not falling in class three with the repeated unit, or class four with its rather magnificent scale of development.

Having arranged the plans in groups for purposes of comparison, we began a process of elimination on the basis of the following considerations:

(*a*) The economy and practicability of the plan for a quarter-section in northwest or southwest Chicago.

(*b*) The provision for health and sanitation.

(*c*) Beauty, including general composition, architecture, originality.

(*d*) Comfort and convenience of residents.

(*e*) Provision for social activities, including education, recreation, business, etc.

Each plan was given individual consideration by all the members of the jury and none was eliminated without unanimous agreement. When the jury had studied all the plans and decided tentatively upon the prize-winners, the merits of the plans were discussed with Mr. Edward H. Bouton, Director of the Roland Park Company, Baltimore, who had been invited to serve as consulting member of the jury. In the selection of the prize-winners the judgment of Mr. Bouton coincided with that of the jury.

A few plans were rejected at the outset because they did not comply with the essential conditions of the competition.

Without attempting to discuss the merits and defects of each plan individually, excepting the prize winners, we may summarize the principal reasons for eliminating those which were not awarded prizes as follows:

(*a*) Several were not adapted to such a district as the one to be provided for according to the terms of the competition. The most common defect in these plans was an over-elaborate system of parks, boulevards, or public buildings which could not be maintained by working people with only moderate means.

(*b*) Aside from the matter of expense some plans were deemed inappropriate for such a district because they were on a too monumental scale. The width of the streets and the arrangement and type of buildings were better suited to a whole city than to a quarter-section.

(*c*) Some plans went to the opposite extreme. They showed little originality, and made inadequate provision for parks and playgrounds, public buildings and social centers.

(*d*) While few plans were rejected because of any single defect, yet those which provided for the business of the district in the central part away from both car lines were considered unsatisfactory to that extent.

(*e*) Plans which provided for large athletic fields next to residences, libraries, or other buildings where quietness would be desirable, were considered defective in that respect.

(*f*) There was a wide difference in the merits of the street systems of the various plans, and this factor was always considered important. The jury was not committed to any particular scheme of streets, curved or straight, but favored those plans which provided for easy access to all parts of the district, while at the same time insuring a reasonable degree of privacy, and freedom from through traffic. We also recognized the merits of those plans which in the arrangement of streets broke up the long interminable views now so characteristic of Chicago, and guarded against the clouds of street dust which are likely to sweep through straight unbroken thoroughfares.

(*g*) The jury considered plans that generally arranged the houses in closed courts, or in a sort of cul-de-sac as defective from the standpoint of ventilation.

Of course it goes without saying that most if not all of the plans submitted had meritorious features. In some respects plans which were not awarded prizes were superior to those which were premiated. On the other hand, none of the plans, including the premiated plans, were considered ideal in every respect. Our problem was not to find a perfect plan, but simply to select the three which on the whole seemed to offer the most satisfactory solution of the problem.

We considered the plan awarded the first prize to be well adapted to the Northwest side of the city. It provides for 1,280 families, 152 of which were to be housed in flats, the rest in single dwellings. Provision is made for considerable variety in the type of dwellings, both attached and detached. Some might think at the outset that the 434 twenty-foot lots are too narrow, especially in view of the fact that 25 feet is now practically the minimum in Chicago, and that thirty and thirty-three foot lots are very common. It must not be forgotten, however, that two or more families are generally housed on each of these lots, so that the amount of land allowed on the minimum size lots per family is really considerably more than the amount occupied per family at present. By the use of attached houses the objection to building on such small lots is obviated.

The plan shows marked originality in many respects. The arrangement of the streets is in our opinion excellent, providing for easy access, and at the same time enhancing the beauty of the entire section. As stated before, while the jury is not committed to the endorsement of any special street arrangement, we cannot agree with those who maintain that curved streets must always be considered as undesirable on a level prairie site. We have already given the reasons for our views on this matter.

One of the best features of the plan is the provision for park, playground, or garden spaces in the interior of most of the residence blocks. Thus the expenses for parking are reduced to a minimum, since there are no extra costs for paving, etc. Moreover, these private parks — private in the sense that they are restricted in their use to the families living in the surrounding residences — afford safe playgrounds for the children and encourage a neighborly spirit among the families in the block.

The plan shows striking architectural composition which gives unity to the whole design. There may be a difference of opinion as to the probable success of a market piazza, but we believe the experiment would be well worth trying.

The plan which was awarded the second prize provides for 1,275 families, 1,156 in single dwellings and 119 in flats. In this plan, as in the one just discussed, provision is made for considerable variety in the types of houses. Space is reserved in the rear of each lot for parks, playgrounds, or gardens. One of the distinguishing features of the plan is the diagonal street. It is questionable whether this would become the main thoroughfare for which it is designed, unless the street were continued in the same direction beyond the confines of the quarter-section. On the whole, the jury considered the plan one of the best balanced in all respects that was submitted, and one that is well adapted to the conditions prevailing in either the Northwest or Southwest sections of the city.

The plan receiving the third prize was selected because, of all those having a central social center, this seemed to be worked out most successfully. The street system was also well arranged. Adequate provision is made for parks, and the dwellings, while mostly of the attached type, are so designed and arranged as to assure plenty of light and air to each family.

III. THE COMPETITIVE PLANS WITH DISCUSSIONS BY THE DESIGNERS

Arranged in alphabetical order
with the exception of the premiated plans

COMPETITIVE PLAN BY WILHELM BERNHARD*

AWARDED FIRST PRIZE

GRADUALLY but slowly we have come to realize that town-planning, like any other civic advancement, is not only a civic necessity but also a thoroughly rational and practical business proposition. Wherever town-planning has been properly handled, it has developed a healthy and sound community life, has proved to be profitable, and has shown in dollars and cents that it has fostered the growth of commercial and industrial prosperity.

The advantages of such planning are becoming recognized, and to-day there is practically not one residential or housing enterprise of noted importance undertaken without first bringing its proposed development under one comprehensive plan unifying and co-ordinating the whole. The results obtained from this foresight have more than justified the comparatively small expense connected with the preparing of necessary plans.

We all know that town-planning means more than a mere beautification of existing conditions, or such improvements as the creation of parks and community centers. Town-planning involves a proper and orderly co-ordination of all of the features of a city's present and future development.

Successful planning will always find for each problem its own individual solution, best suited to the particular needs of the case. The resources which nature offers us will be individually utilized, the topography of the land closely followed, and every feature forced to serve to the utmost advantage.

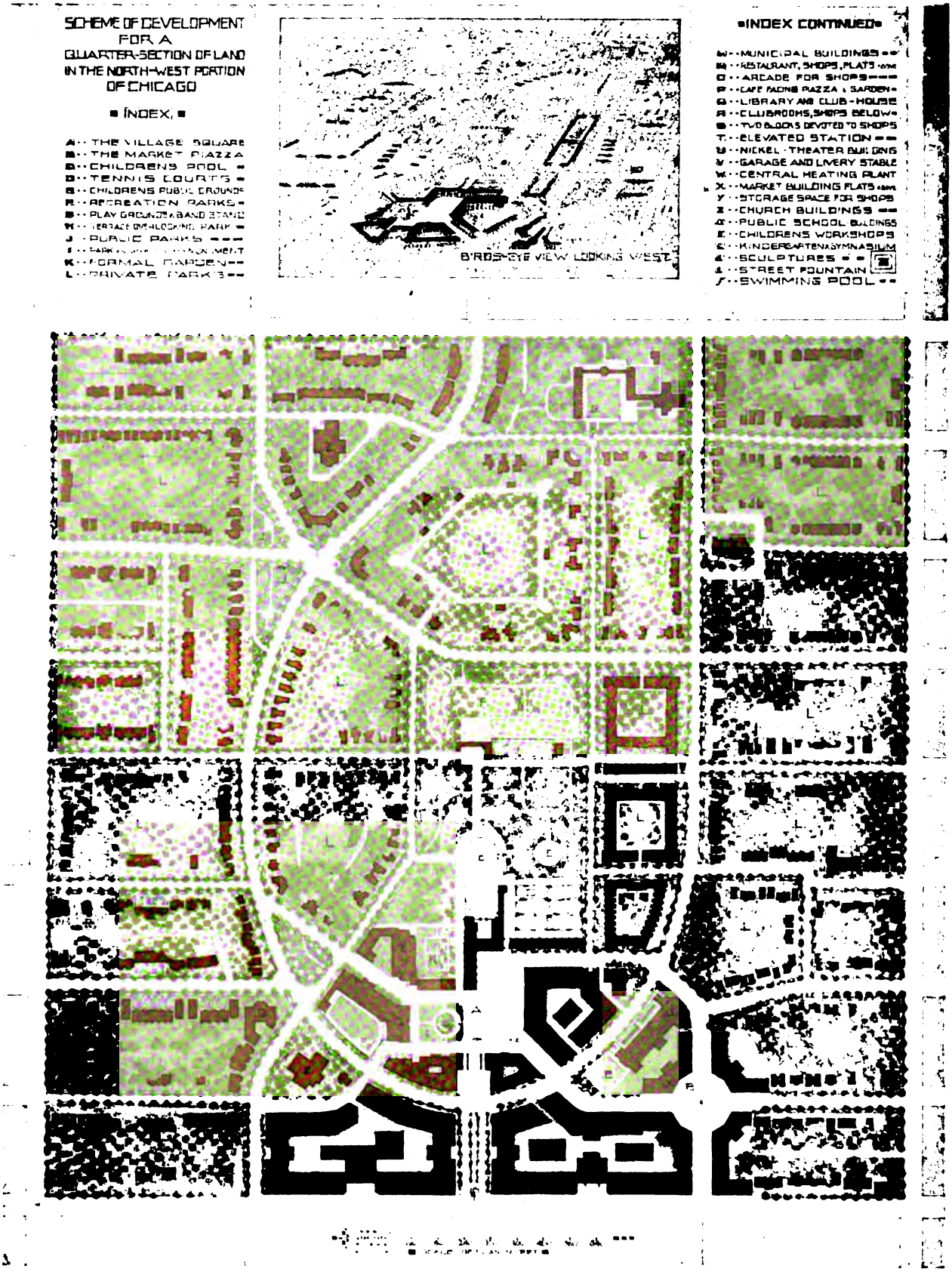
The accompanying plan for laying out a quarter-section of land was conceived for a particular site presenting conditions actually existing in the outskirts of Chicago. It is by no means to be regarded as a typical model to be multiplied indefinitely.

The introduction of one typical solution with the idea of repeating it indefinitely means the same old monotony, that deadly monotony which has resulted from obstinate adherence to the gridiron plan and has begun to wear on the nerves of every community genuinely interested in its own welfare. Moreover, the method of repeating a single unit cannot be practically applied within a complicated organism such as an already partly developed city, not even under such physical conditions as obtain in the prairie regions and in most parts of Chicago and its adjacent territory.

Briefly stated the endeavor in this layout has been:

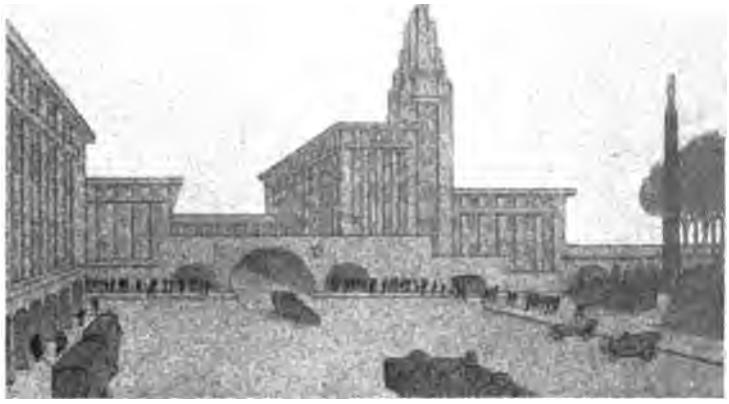
1. To create a community center as an architectural emphasis and as a center for business and civic life.
2. To separate distinctly the business streets and squares from the residential part of the community.
3. To eliminate as much as possible from the developed tract the through-running traffic from Chicago proper.
4. To emphasize the domestic character in the business as well as in the residential districts of the community.

*NOTE: Competitors submitted only a plan and bird's-eye view in the competition. An opportunity to supplement these with additional drawings or photographs for publication was later extended to each contributor.—THE EDITOR.



First Prize Plan by Wilhelm Bernhard

For statistical data relating to this plan see tables pp. 134–137, Plan No. 1.



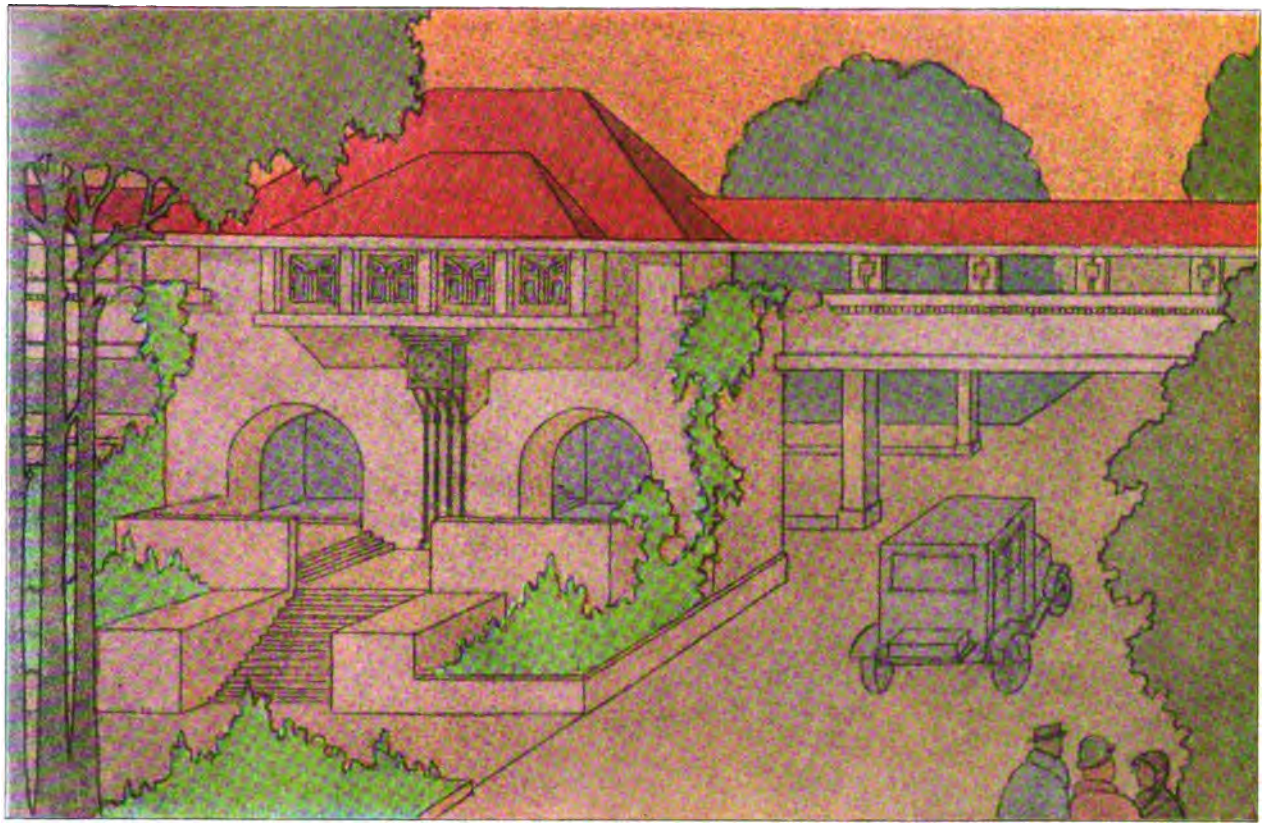
THE VILLAGE SQUARE LOOKING EAST TOWARD COMMUNITY CENTER

5. To give to the architecture an individual character as an outer expression of the inner life of the community.

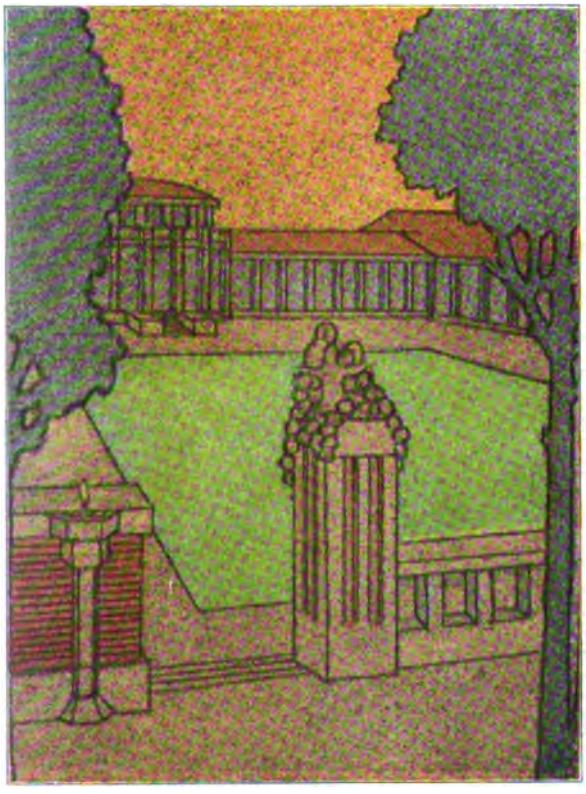
The plan provides for an organically worked out community center, an idea which only some ten years ago was considered a beautiful but impracticable dream, but is to-day known to be in many instances a practical necessity. The idea in itself is comparatively new but has proved a success in many rapidly growing and prosperous communities in this country. The center of the community will be the village square, surrounded by buildings for civic, public, and business life. A 34-foot wide archway will serve as a main, architecturally accentuated entrance to the square. On the east side is a group of municipal buildings, on the north side buildings for mercantile purposes with an open arcade, and on the west side a clubhouse and library facing the main park and recreation places. The south part of the square will contain an open garden, with a monument in the center. Close to the square and with easy connections to it will be the market piazza, as a center for food supplies. In the near neighborhood will be located two blocks entirely devoted to shop purposes, with apartments above, a lodge-hall, a fire-station, theater, garage, and livery stable, two schoolhouses and churches. Thus the community center serves as mart or exchange for the suburb's civic and business life, a distinct separation between residential and business parts is made, and and the domestic character which ought to be one of the most notable characteristics of an up-to-date development for residential purposes is obtained.

PUBLIC SCHOOL, LOOKING EAST

Another essential in maintaining a true domestic character is the avoidance of unnecessary traffic. The monotonously endless business thoroughfares running in straight lines from Chicago proper out through its suburbs, with their never-ceasing noise of street cars and heavy wagons, and their temptation to automobiles for speeding, are making impossible the quiet, clean, healthy environment the name suburb suggests. The value of straight thoroughfares on which the suburban passenger traffic must be located is obvious. Those thoroughfares should be planned tangential to residential subdivisions, running between them and serving as feeders to them, and should not go through the



ELEVATED STATION

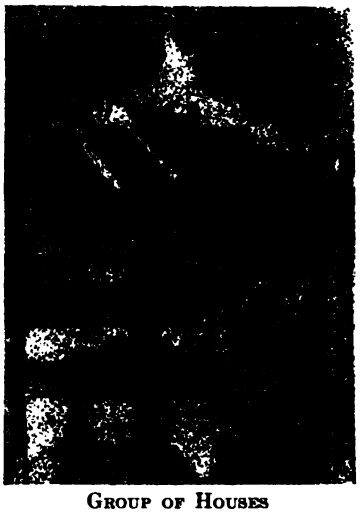


CHILDREN'S PLAYGROUND FROM WEST

CHURCH AT TERMINUS OF RESIDENTIAL STREET

heart of the resident centers. Residential streets, however, within the subdivision should be planned informally. They will add to the attractiveness of the whole district, and at the same time discourage through-traffic.

Thus, in giving a curved line to the chief streets of the layout, the purpose has been to discourage their use as through streets, and, from an esthetic viewpoint, to avoid the monotony of straight street lines so predominating in this country. The two main thoroughfares will have a width of 60 feet, slightly curving when approaching the community center, with ample set-back of buildings. Streets less important for traffic will be 40 feet wide and less. The additional space thus given to the lots will decrease the public cost for pavement repairs and will increase the size of the lots, permitting ample space for front gardens as well as back yards. The sidewalks will all have a width of 5 feet, except in front of stores, where they have been given an additional 5 feet. On the street side of sidewalks there will be throughout the entire layout a grass covered space 6 feet wide for trees and shrubbery.



GROUP OF HOUSES

The grouping of houses in larger and smaller units, of which some are set back, some brought forward, will avoid the monotony which the street with a straight line of single houses offers, and at the same time will decrease the building costs.

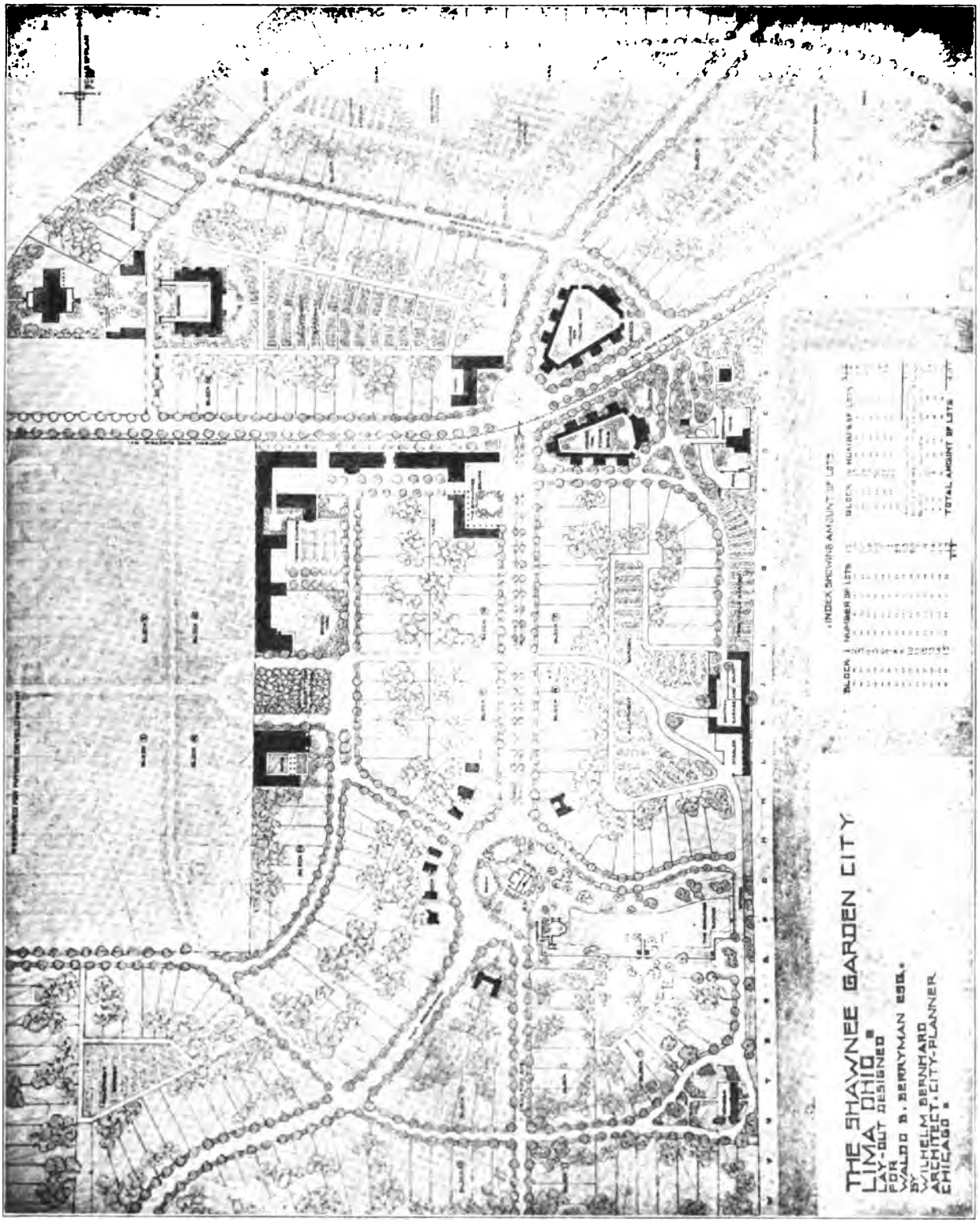
Wherever possible there has been provision made for a private park in every block. This space will serve not only as ample space for raising vegetables but also as an ideal playground for small children.

The lots facing the boundary streets, located near the surface car lines, are supposed to be occupied by citizens of moderate means. The lots on the inside of the tract facing the public park will have a street frontage of from 40 feet up to 80 feet and will naturally be selected by people in more favorable circumstances. The idea of providing lots suitable for citizens of different means has been adopted in most of the modern real estate developments and garden cities, both abroad and in this country, and it has proved very profitable.

The organically developed suburb, strongly marked by an architecture of its own, able to impress its individuality on the district, will awaken in its citizens the love for beautiful surroundings, and will express definitely through its individuality the individual life of its citizens.

The plan of a suburban development near Lima, Ohio, shown on the opposite page and now being carried out may be interesting as a realization in fact of the idea advocated by the author.

The tract is located two miles southwest from the heart of the city of Lima at the highest altitude around the city. It embraces some five hundred acres of beautiful, gently rolling land with ravines for natural drainage and valleys which provide exceptional natural opportunities for an ideal residential community. It is being developed by private capital with the ultimate aim to produce, amid attractive surroundings, homes not to exceed $4,000 each in cost.


THE SHAWNEE GARDEN CITY
LIMA OHIO.
LAY-OUT DESIGNED
FOR
WALDO B. BERRYMAN ESQ.
BY
WILHELM BERNHARD
ARCHITECT. CITY-PLANNER
CHICAGO.
INDEX SHOWING AMOUNT OF LOTS
BLOCK
NUMBER OF LOTS
TOTAL AMOUNT OF LOTS

COMPETITIVE PLAN BY ARTHUR C. COMEY

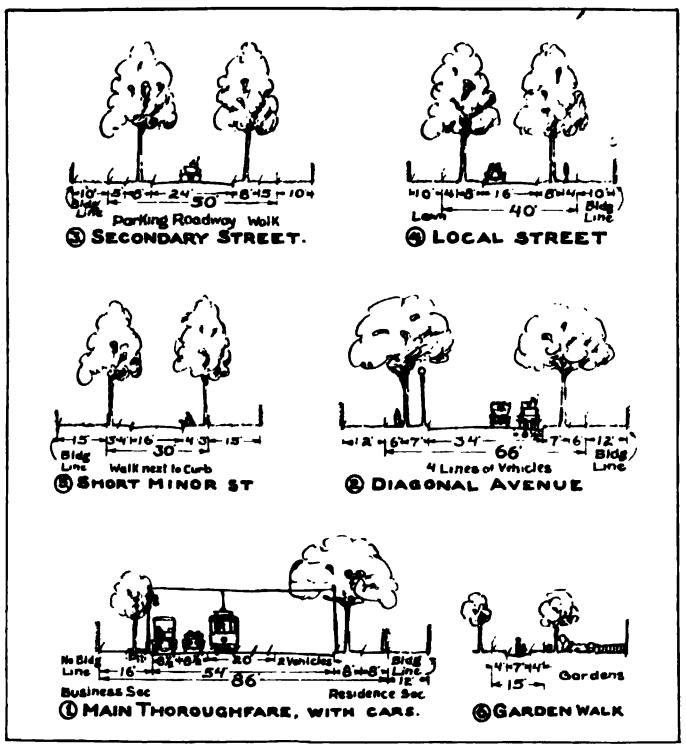
AWARDED SECOND PRIZE

THE stated limitation of 1,280 families for the quarter-section controls the type of development almost without regard to the price of the land. At this density but few apartments are necessary or desirable, these being located at the corners of the property on the car lines, together with most of the stores. Nor need solid rows of dwellings be built. Detached houses throughout would be feasible but there would be wasteful extra expense and a sacrifice of privacy due to the close proximity of windows in adjacent dwellings. The double or semi-detached house is therefore the normal type, with fairly frequent single houses and also groups of three or four.

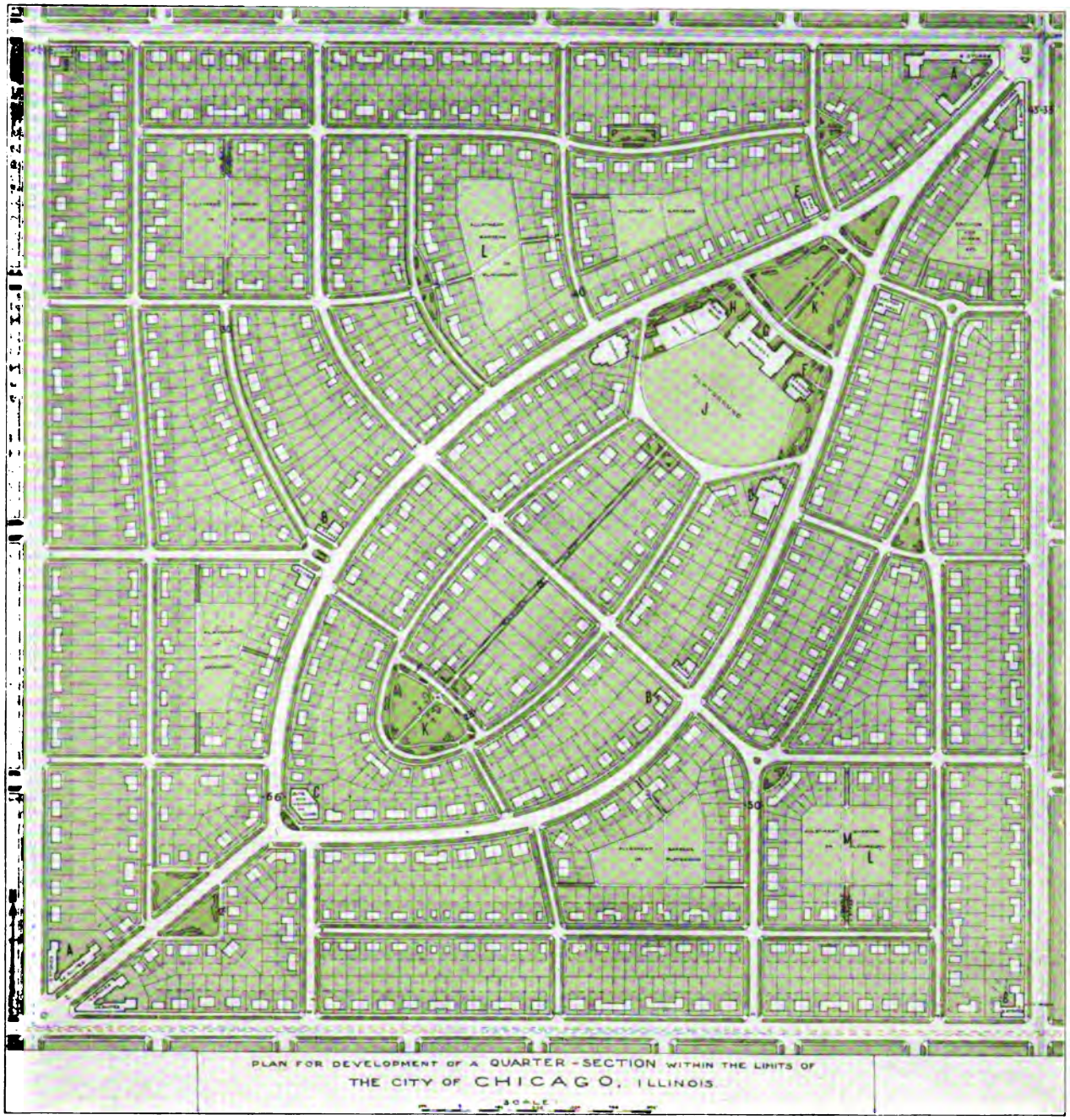
The normal lot approximates 35 x 100 feet, but a considerable range is provided to suit varying needs. Important features in several blocks are the allotment gardens, where near-by residents may rent a plot whenever they feel able to carry it along, but need not be burdened with the permanent responsibility of the extra land. With the low density required (eight families per acre) such means of eking out the family income becomes especially beneficial. Should, however, the demand for these allotments be slight, the land will be almost equally valuable as local playground space.

The principal playground is located with the school, which, with most of the other community buildings, such as branch library, fire department, recreation center, a hall, and churches, are grouped about a small park or common.

The street system is designed to provide access by broad avenues, with intermediate streets for local use only, in this way serving the traffic more economically and far more attractively than by the gridiron system. It is not believed, however, that an extremely irregular or circuitous street system should be adopted in this district. Nor under present American conditions should there be deep interior courts, impasses, and similar features, as these are hard to light and police and are apt to require extra piping, though economizing in street surface. A considerable variety in site planning is provided, however, with several small parked areas on which the houses face. Furthermore, the building lines, shown on the plan by broken lines, permit interesting compositions, with narrow fore-gardens along all streets. The establishing of an interior as well as exterior building line is an important provision to insure permanent light and air through the middle of each block.



STREET SUBDIVISIONS



SECOND PRIZE PLAN BY ARTHUR C. COMEY

KEY TO PLAN

A. Apartment Houses.	D. Churches.	G. School.	K. Parks.
B. Stores.	E. Fire House.	H. Field House.	L. Allotment Gardens.
C. Club or Institute.	F. Library.	J. Playground.	M. Garden Walk.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 2.

Most of the street frontage runs north and south to secure sunlight in all the rooms, but the valuable frontage along the main thoroughfares is preserved intact. Trees (not shown on the plan for clearness) are included in a parking strip on all streets. On the short, thirty-foot streets they are adjacent to the property with the sidewalks next to the pavement so as to give adequate space between the rows of trees and to economize on street works, but the building lines are kept the same distance apart as on the forty-foot streets.

The subdivisions proposed for the various streets are shown on the accompanying diagram. Boundary thoroughfares are shown widened to 86 feet, ten feet being taken from the property in the quarter-section, thus providing 76 feet for the present.

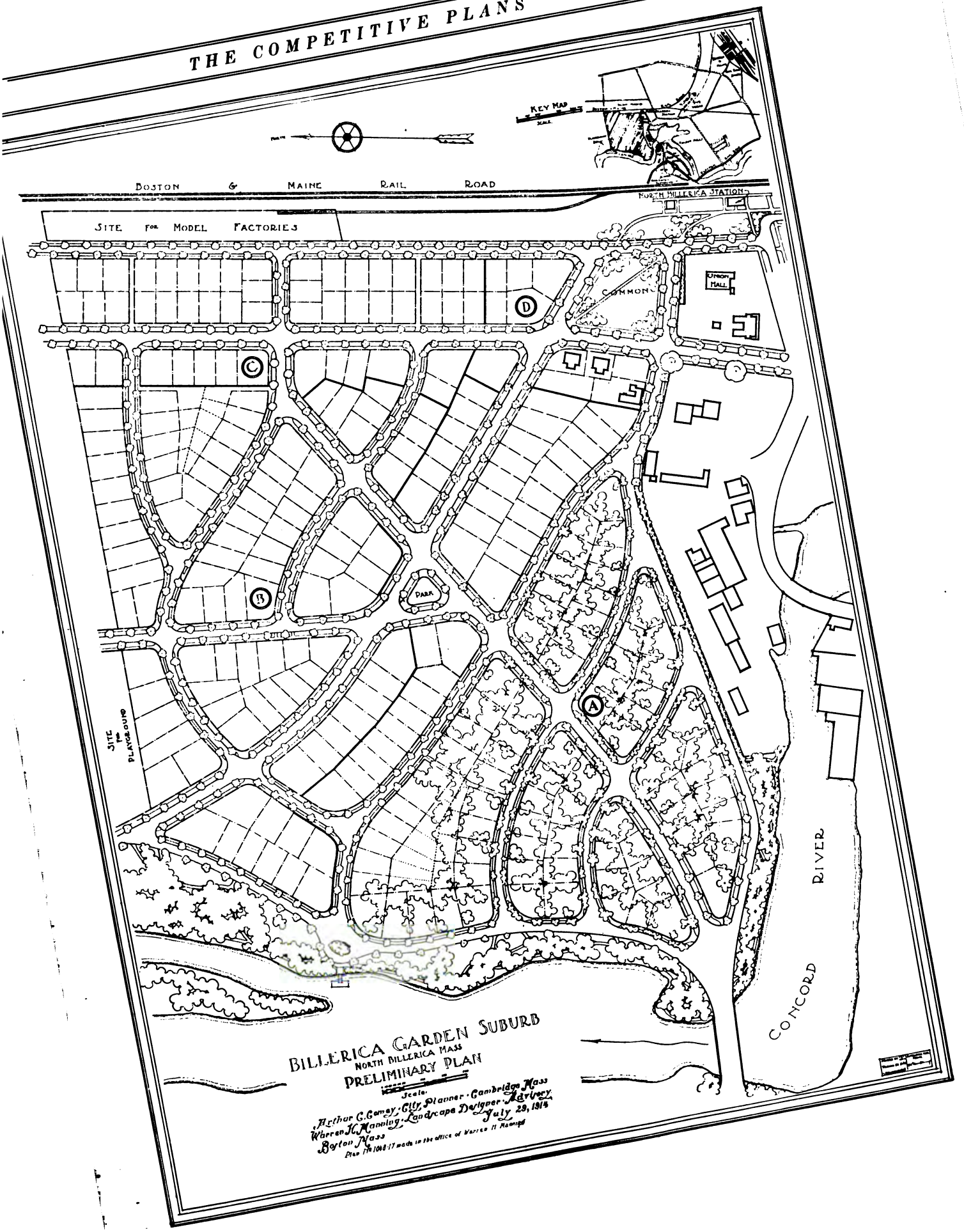
The garden walks are to be constructed with open wire fences and will form attractive by-passes into the gardens. With the proper inspiration and guidance the back yards should develop fully as attractively as the street frontage.

The type of improvement proposed by this plan will provide the essential physical features of a Garden Suburb adapted to American conditions and ideals. If wise methods of financing and disposal are adopted and effective community interests are fostered, its permanent success will be insured.

A suburban development actually under way at North Billerica, Mass., a plan of which appears on the opposite page, would indicate that the Garden Suburb idea is perfectly possible of realization under American economic and social conditions. The plan represents a model community of 56 acres for the workmen of the Boston & Maine R. R. repair shops, twenty-one miles from Boston and favorably located adjoining the North Billerica station and the present village center, with its school and other public buildings.

Acting under the recommendations of the Massachusetts Homestead Commission the Billerica Garden Suburb, Inc., was incorporated in June to develop the estate. The Company's dividends are limited to five per cent cumulative, and each resident must be a shareholder. This is the first time in the United States that the five essentials of the English garden suburb — site planning, limited numbers of homes per acre, wholesale operations, limited dividend, and participation by the residents — have been combined to meet the needs of the workman earning $12 to $20 per week.

The plan shows the type of development along advanced garden suburb lines, with an average of five families per gross acre. Sites for community buildings, playgrounds, and allotments are provided, and the arrangement of roads and houses is carefully determined to secure the maximum practical and æsthetic values. The very attractive river front is dedicated to the town's park system, and a large grove of pines in the southwest section has been preserved to a great degree by the careful location of street and lot lines. In one section (A) houses are being sold outright; another portion (B) will be turned over to a Co-partnership Society for Development by that method; in a third section (C) houses for rent will be built; and in the fourth (D) the Company will erect special buildings for shops, improved boarding houses, lodgings, etc.


KEY MAP
BOSTON & MAINE RAIL ROAD
NORTH BILLERICA STATION
SITE FOR MODEL FACTORIES
COMMON
UNION HALL
D
C
B
A
PARK
SITE FOR PLAYGROUND
CONCORD RIVER
BILLERICA GARDEN SUBURB
NORTH BILLERICA MASS
PRELIMINARY PLAN
Scale
Arthur C. Comey, City Planner, Cambridge Mass
Warren H. Manning, Landscape Designer, Arlington
Boston Mass
July 29, 1914
Plan No 1048-17 made in the office of Warren H. Manning

COMPETITIVE PLAN BY ALBERT LILIENBERG AND MRS. INGRID LILIENBERG

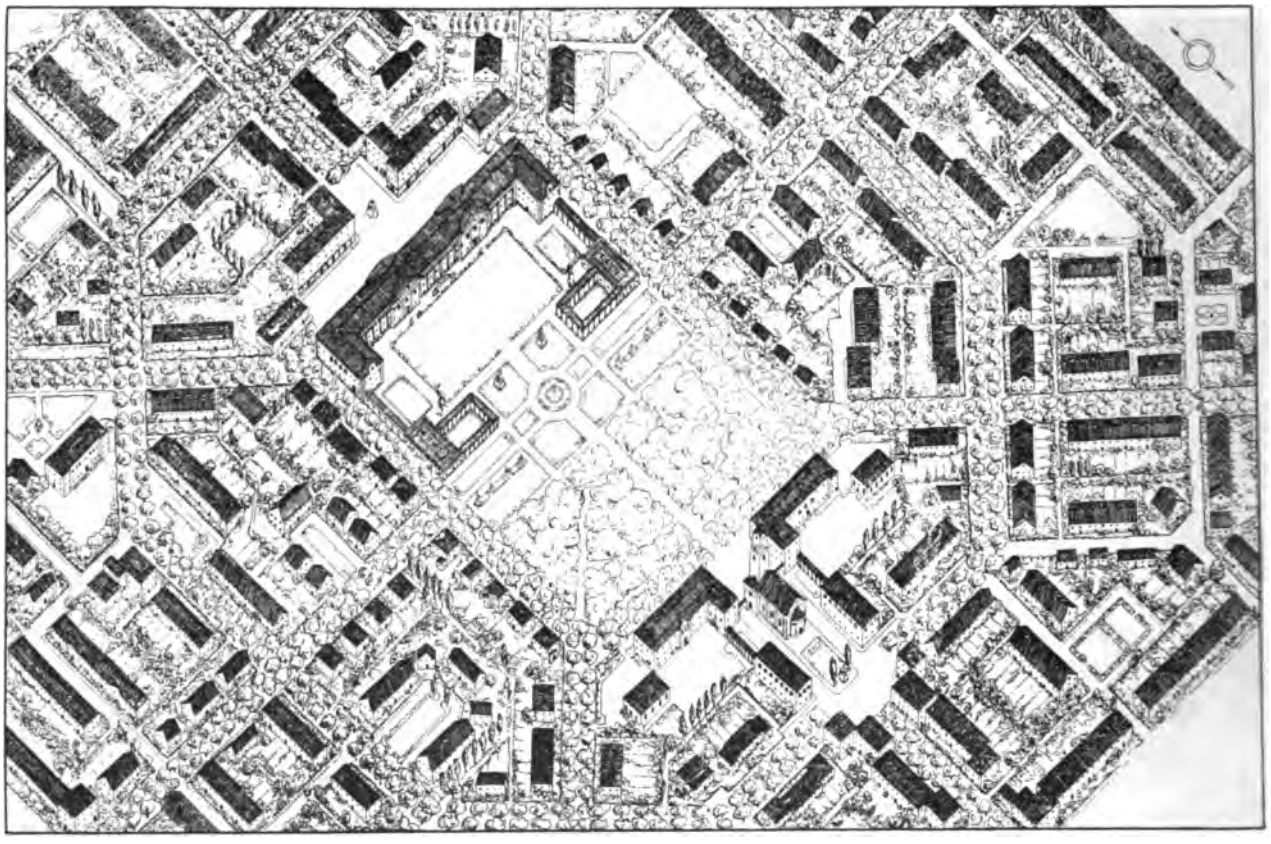
AWARDED THIRD PRIZE

A TOWN planning scheme is one of the most important things we can leave to posterity. On the quality thereof depends to a great extent if the generation to come will grow up to be healthy and strong citizens, and if they will be comfortable in their town; it decides if the town will continue to engender the discouraging feelings that it does now, or if it will help to raise the character and the sense of beauty of its inhabitants.

This quarter-section of land the competitor has tried by the simplest of means to make a site for real homes. The streets have not been made too long, and at the end of them one's eyes will always meet a pleasant view. Streets without any green and streets with grass, trees and fore-gardens alternate with one other. Here and there open spaces are left for small parks and playgrounds. To the schools have been given sunny and free locations, and other public buildings have been placed on the most monumental sites of the section. The directions and dimensions given to the streets have not been fixed with regard to through traffic, but are designed for local use and to provide access to the street car lines.

Both for economical reasons and for esthetic effect the by-streets have been made as narrow as possible while proper distances between the houses have been secured by means of fore-gardens.

BIRD'S EYE PERSPECTIVE OF SCHEME OF DEVELOPMENT FOR A QUARTER-SECTION OF THE CITY OF CHICAGO, ILLINOIS.



MOTTO: "HOMES AND BEAUTY."

SCHEME OF DEVELOPMENT
FOR A
QUARTER-SECTION OF LAND IN THE CITY OF CHICAGO, ILL.

MOTTO: "HOMES AND BEAUTY."

THIRD PRIZE PLAN BY ALBERT LILIENBERG AND MRS. INGRID LILIENBERG

KEY TO PLAN

A. Field-house, room for lectures, festivities, etc.
B. School.
C. School, Hospital or other public buildings.
D. Restaurant.
E. Church.
N. Athletic Field.
O. Playground.
P. Tennis Courts.
Q. Wading Pool.
R. Swimming Pool.

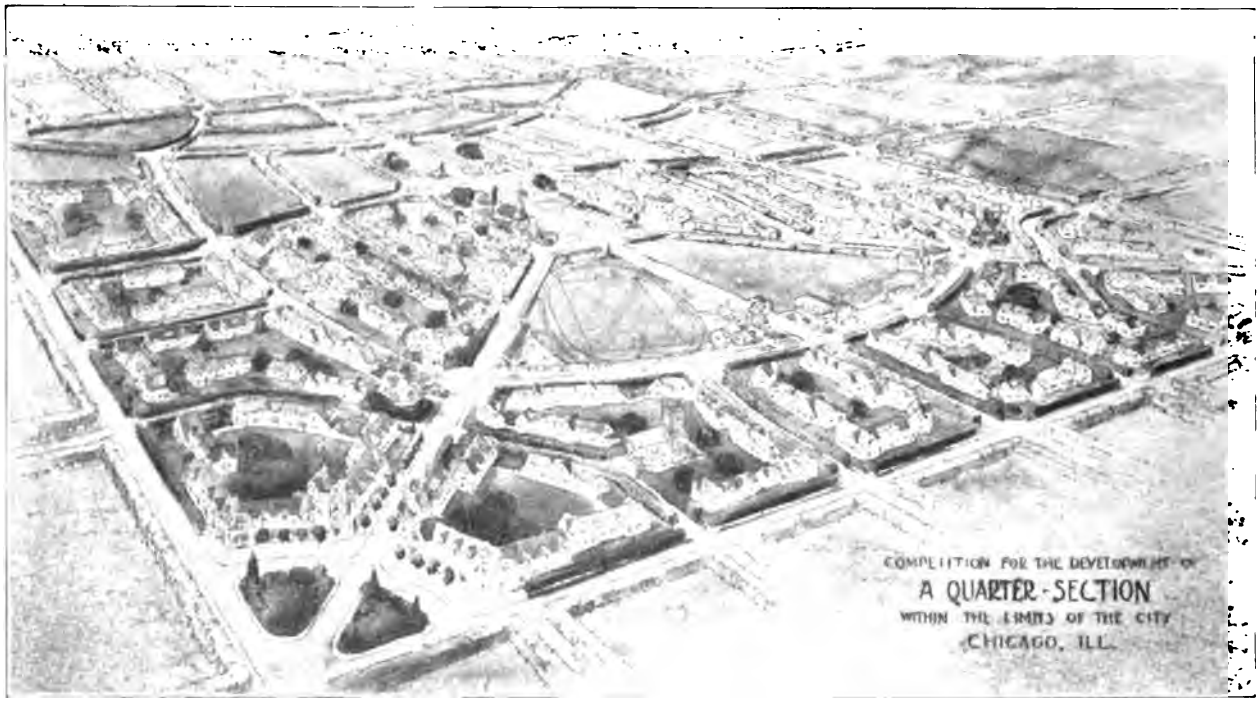
For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 3.

COMPETITIVE PLAN BY H. A. ANDERSON AND VICTOR REECER

THE accompanying scheme is submitted as a city layout which will fit in any portion of the present gridiron scheme occupied by the congested portions of Chicago. It satisfies the conditions imposed by the existing street system. These conditions are that the streets connect with the stubs of the adjoining property, that the blocks be easily numbered, and that reasonably direct transit across the section be possible. It is so arranged that should it be desirable the scheme could be repeated. The streets are made wide with the idea of obtaining a picturesque effect, and no decided curves which would impede the circulation are used. The present population of such a section of Chicago is about 1,500 families, and we have accommodated 1,034 families, or one family to one lot, practically condemning the building of flats and apartments except at the four corners of the section.

The houses represent quite a departure from general building practice in this country, but lend themselves most admirably to a scheme of this kind. Instead of placing individual houses upon each lot, we have combined the houses into groups of two, three, and up to eight in number, renting the portion occupying each lot to one family.

The recreation and public areas have been combined and located in one section, convenient to all parts and so designed as to form a pleasing composition for the benefit of all living within the quarter-section. In one section of the park we have provided an athletic field and a gymnasium for the proper recreation of the people and the healthy development of sport.



BIRD'S-EYE VIEW, LOOKING SOUTHWEST

The refuse is taken care of by a system of alleys, shown upon the plan, which are of the minimum width of 16 feet required by the ordinances of the City of Chicago. Where the block is large enough to permit of extra space in the center, this is to become city property and is to be used as a recreation ground by the tenants occupying the adjoining lots.

PLAN BY H. A. ANDERSON AND VICTOR REECER, CHICAGO, ILL.

KEY TO PLAN

A. Club House.
B. Assembly Hall.
C. Gymnasium.
D. Public Bath.
E. Police and Fire Station.
F. Schools.
G. Hospitals.
H. Churches.
J. Stores and Business Buildings.
N. Band Stand.
O. Tennis Court.
P. Athletic Field.
Q. Playground.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 12.

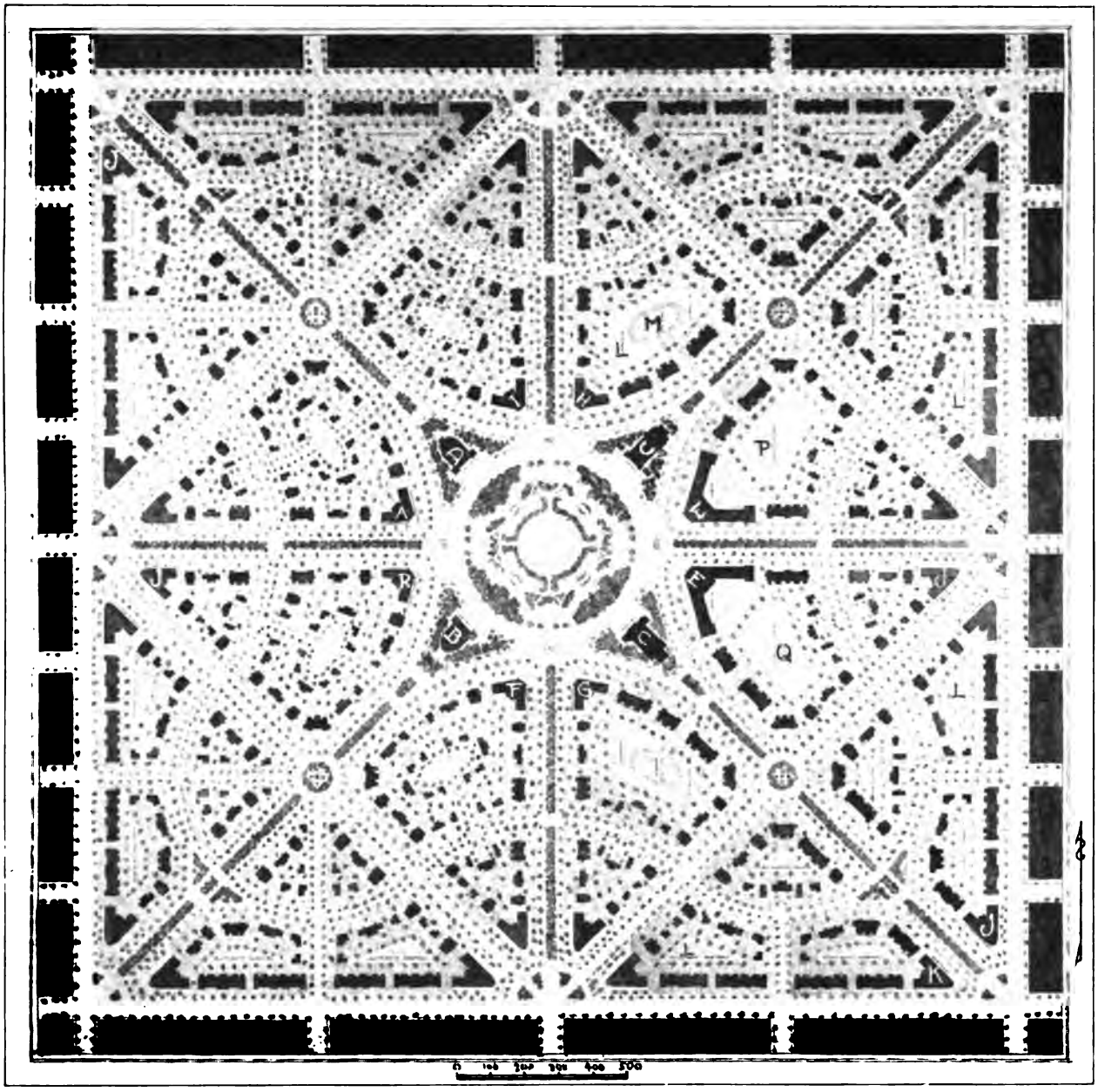
COMPETITIVE PLAN BY LOUIS H. BOYNTON

IN planning a development for a quarter-section in a city like Chicago the first consideration is to adopt an arrangement of streets which will provide a system of circulation that may be readily combined with the existing "gridiron plan," and which, indefinitely repeated, will provide a new system of circulation avoiding the bad features of the old. Convenience of circulation is, of course, the prime requisite of any good city plan. Apart from artistic considerations the worst feature of the gridiron plan is the difficulty of going from one place to another in a diagonal direction. Moreover, as a result of a scientific study of the problem, Mr. William Atkinson has demonstrated that the ideal exposure for houses is provided in streets that run northeast and southwest or northwest and southeast, or in other words in streets that run at an angle of 45° to the north and south line. Consequently a diagonal system of streets has been introduced which, together with the curved road shown on the plan, provides an ideal frontage for the houses.

As shown on the plan for repetition (page 26), this would introduce two major systems of circulation; i. e., northeast and northwest, and north — south and east — west, the former being the more important. Of course if the plan were repeated the streets bounding the quarter-sections should be widened and parked, providing a location for street car lines in the center of the parking. Secondary circulation is provided by intermediate streets entering the property on the sides and by a winding road which encircles the whole tract.

BIRD'S-EYE VIEW OF PART OF THE QUARTER-SECTION

The east and west halves of the property, as shown on the plan, are subdivided on slightly different principles so as to show two of the many possible variations of the scheme. The east half follows the practice in the English Co-partnership Suburbs,



PLAN BY LOUIS H. BOYNTON

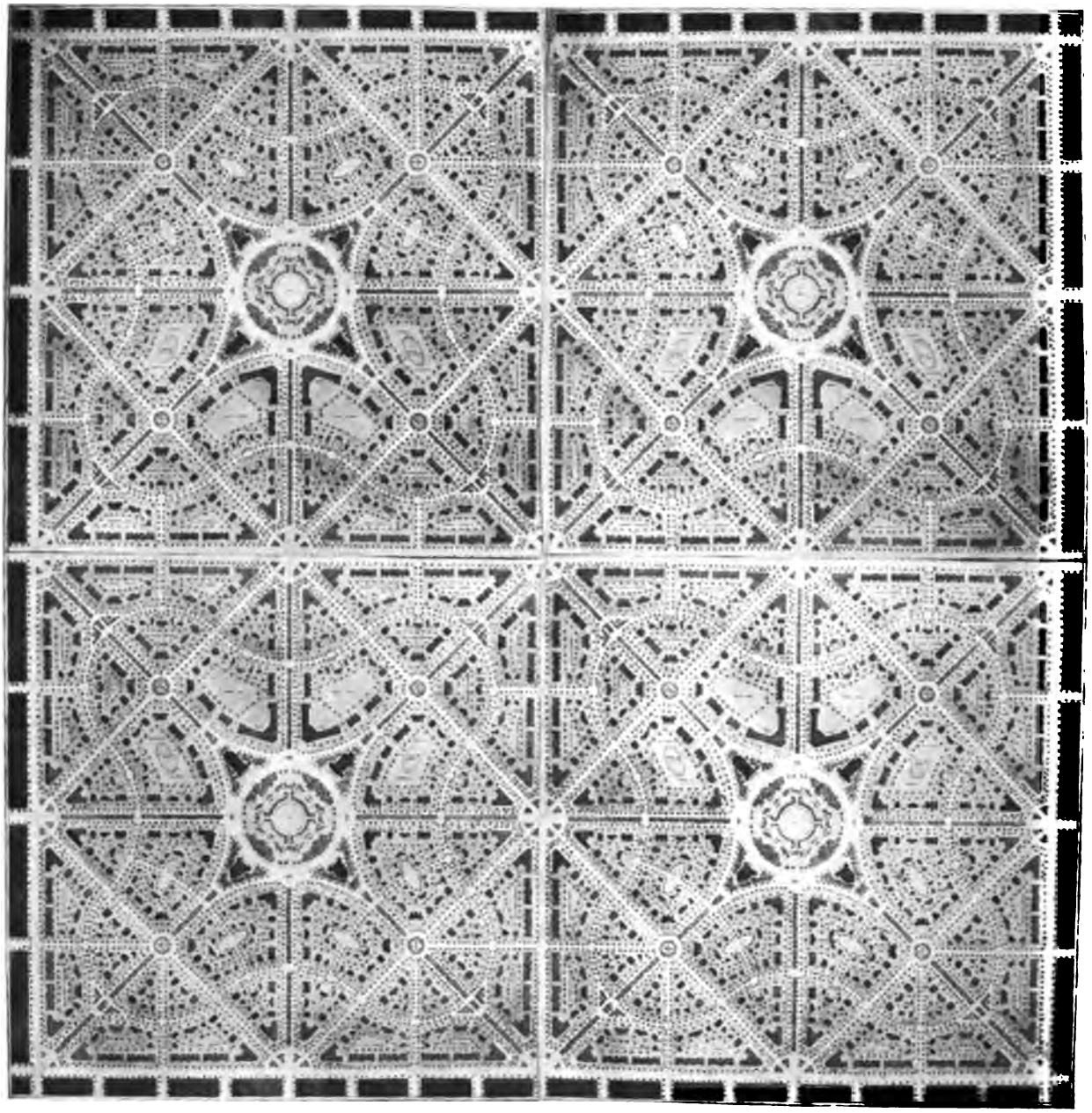
KEY TO PLAN

A. Administration Building and Dispensary.
B. Assembly Hall.
C. Church.
D. Theatre.
E. School.
F. Children's Clubs.
G. Office Building.
H. Inn.
I. Adult Clubs.
J. Stores and Flats.
K. Garage.
L. Allotment Gardens.
M. Playground.
P. Athletic Field.
Q. Tennis Courts.
R. Police and Fire Station.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 13.

such as the Hampstead Garden Suburb, with ample space in the center of the blocks for allotment gardens and semi-public playgrounds, while the west half is divided for the usual real estate development where the lots are sold to individual owners.

It is a well established principle that in order to provide comfortable dwellings at a low rental or at a low selling price it is necessary to reduce the size of the individual holdings to a small area and to build houses in series or attached groups. Consequently there are about 350 houses which would be attached on either side and the greater part of the rest of the houses are semi-attached either by being built in groups of two or by being built on the ends of the longer blocks.



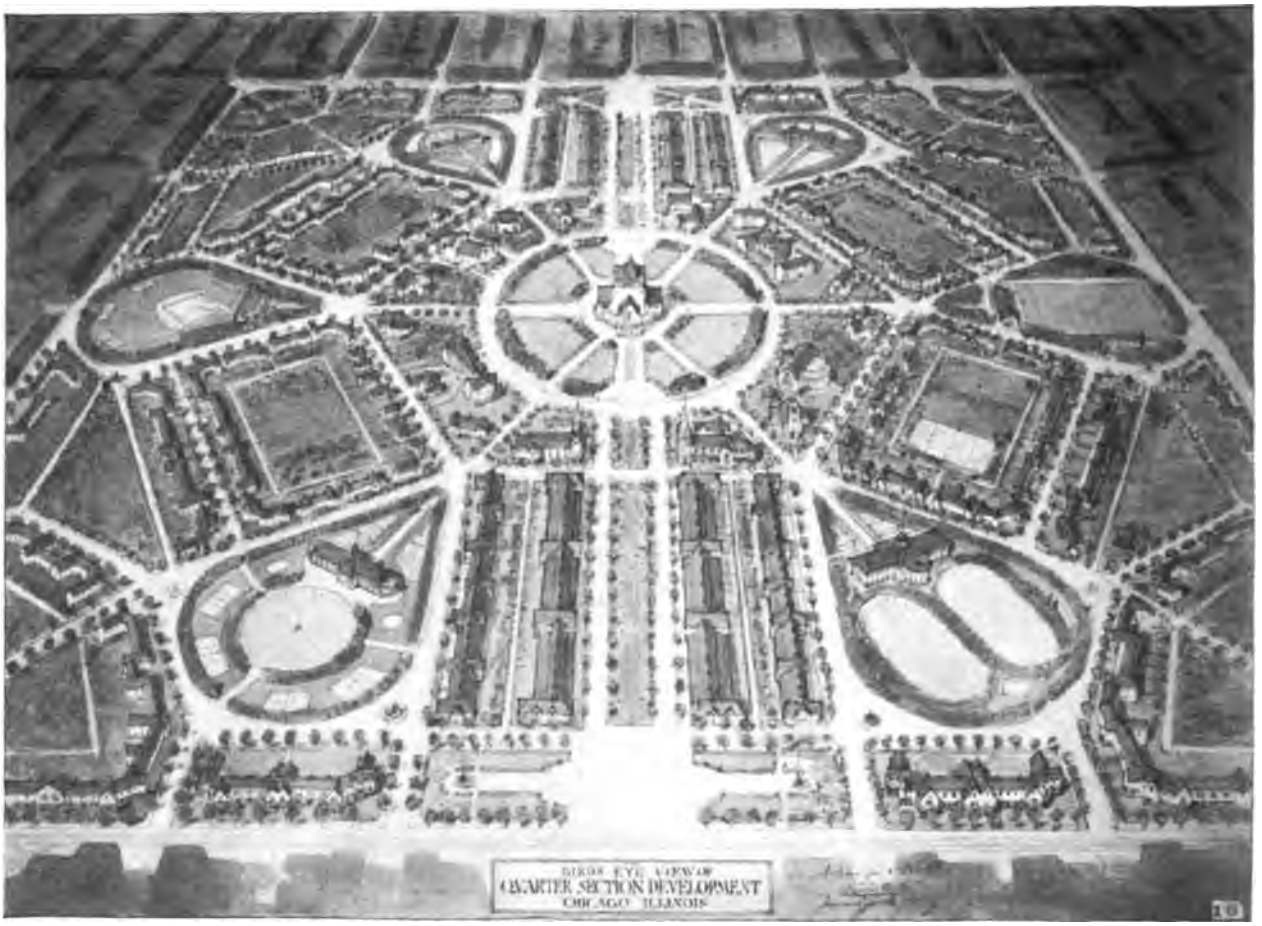
PLAN SHOWING POSSIBLE REPETITION OF QUARTER-SECTION UNIT

As to the width of the streets: the parked avenues are 80 feet wide from lot line to lot line with two 18-foot roads and a 24-foot parkway. The streets on the inscribed square are 60 feet wide with a 28-foot roadway. The winding roads are 40 feet wide with a 16-foot roadway with occasional turn-outs. The widths of the sidewalks have been computed on the basis of five feet for the more important streets and four feet for the narrower roads. In almost every case the width between building lines is 130 feet.

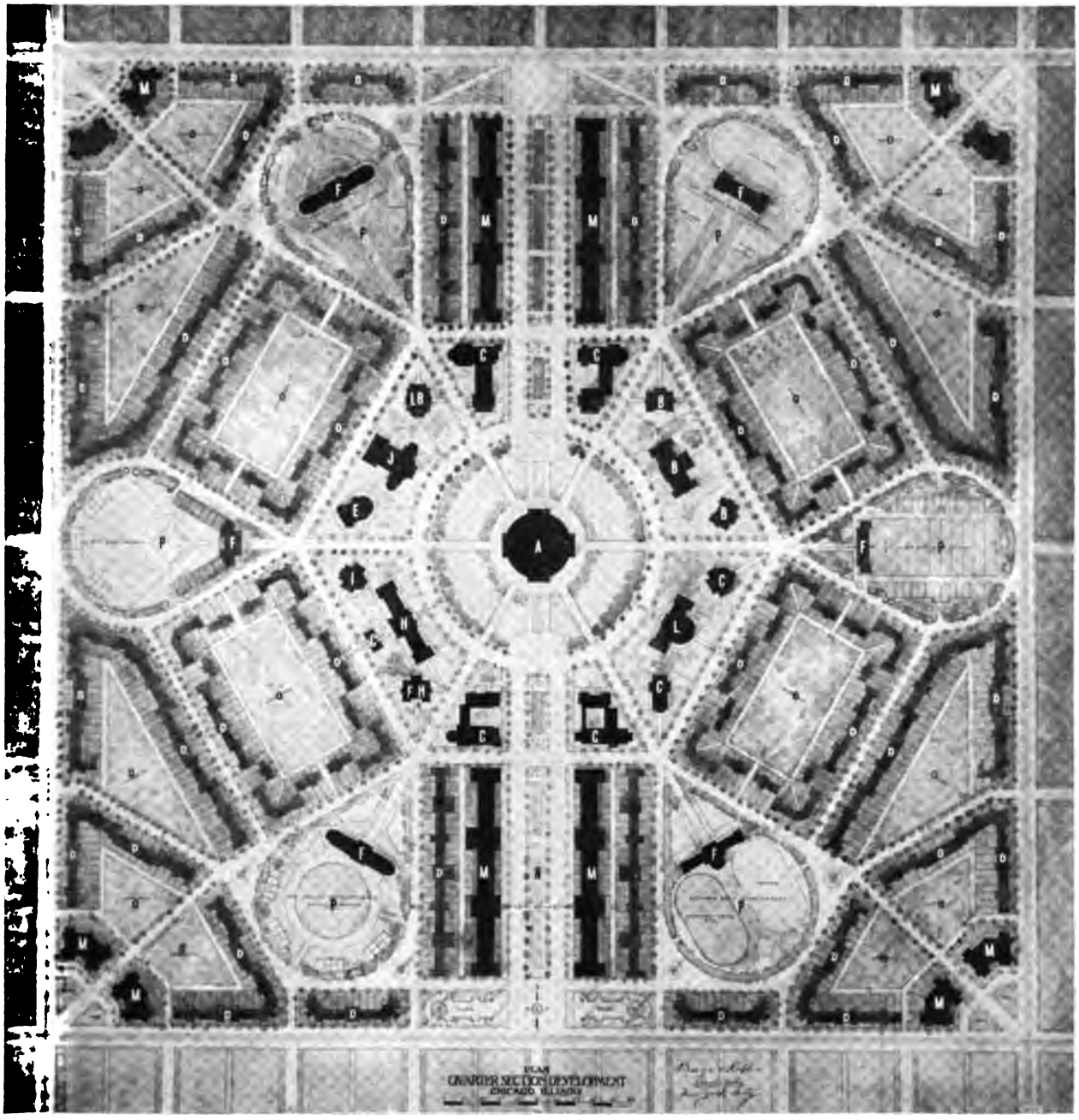
COMPETITIVE PLAN BY BRAZER & ROBB

FIRST we must recall that the program stated that the site was on a level prairie without trees, buildings, or subdivisions, but that "the surrounding property is subdivided in the prevailing gridiron fashion as indicated by the plat." These conditions controlled our solution of the problem. Knowing that any such subdivision before it could be executed must be officially approved from a practical standpoint as to its arrangement of streets, all of the surrounding streets are carried either directly or indirectly into and through the property, thereby not seriously impeding the through traffic of fire engines, ambulances, etc., which city regulations usually require. The main business arteries are very direct, so as to attract the majority of the through traffic, and it will be noticed that the residential streets are more or less curved and reduced in width so as to make them unattractive for direct traffic communication. This arrangement allows the continuation of surrounding street names through the property, simplifying the house numbering system, etc.

In order to esthetically harmonize this development with the surrounding gridiron plan so as not to make the adopted garden suburb treatment so pronounced as to deteri-



BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY BRAZER & ROBB

KEY TO PLAN

A. Social Center Building.
B. Schools (Boys' and Girls' Grammar and High).
C. Churches.
D. Dwellings.
E. Lecture Hall.
F. Field Houses.
FH. Fire House, Civic and Police.
G. Garage.
H. Hotel.
I. Y. M. C. A.
J. Theatre.
L. Library.
LB. Lodge Building.
M. Stores and Dwellings.
N. Water Pools.
O. Gardens.
P. Play Grounds.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 18.

orate surrounding property, we have kept the transition from the surrounding gridiron into this property gradual and harmonious. For this reason also we adopted a geometrical, formal pattern with only a sufficient amount of curved streets to give interest and variety, but there is great variety of direction and also of short length streets. The property is thus subdivided into building lots having right angles attractive from the real estate man's point of view. Through communication is provided on the diagonals, which have been purposely curved.

By keeping the width of the paving of residential streets as narrow as possible, the first cost of the development is reduced as well as the cost of maintenance. Such streets would also probably retain their residential character indefinitely, as trade follows wide, direct streets. All of the residences are served by rear alleys, thereby removing all service from the streets. These alleys would not be sheet paved and all sewer, water, telephone pipes, etc., would be laid therein, so that in case of necessary excavation for repairs they could be cheaply and readily broken into and patched without spoiling the more expensive paving of the main streets.

It will be noticed that, as we have assumed this property to lie in the northwest quadrant, practically all of the residential streets run more or less north and south, thereby insuring in both morning and afternoon the maximum amount of sunlight to each dwelling. The residences have been kept in the more retired and quiet locations, although easily accessible to the public and semi-public life of the development, as well as to the surrounding trolley lines, which undoubtedly would in the future traverse all the wide bordering streets. Additional trolley lines may be chartered on both the north and south, and east and west axes as well, without taking the clatter and danger directly through the residential streets.

The residences have all been arranged on the English garden principle; that is, in the center of each block a large garden space is reserved which could be allotted, as the residents of that block might decide, either for gardens or for playgrounds which could be used for tennis, bowling greens, or for play space for very young children where they may be watched by their mothers from the dwelling windows. If this development were managed by a wise corporation, these garden spaces could be kept entirely open as such, until the full development of the property as shown on the plan had been reached. If this land then became so valuable that the garden spaces must be occupied, upon vote of the residents or the corporation a street could be cut directly through this garden property, giving residence lots equal in area to those facing the street surrounding the block. This would, of course, be done only in a case of emergency, but it would be much preferable to have these garden spaces occupied by residences than to use any of the residential portion of the property for mercantile purposes on account of the increased value of the land, as is unfortunately the usual practice. These garden spaces contribute to the beauty of the scheme and are most desirable for the sake of sufficient light and air, as well as for fresh vegetables or playground space.

All dwellings on residential streets either face directly upon a park, public ground, or playground, or else such space is located at the end of a short block. Such an arrangement should prove most attractive in giving open and well-landscaped vistas from each residence. As seen in the perspective view, the residences are designed in an attractive

suburban style and arranged in groups more or less connected in proportion to their value, the cheaper ones being all connected in order to save great expense of finished side walls and the economic loss of heat. By projecting some of the houses and retiring others, architectural variety and attractive front and rear yards are obtained, each with its own flower garden. The cheaper and connected dwellings for the workingman have been placed where they would be most accessible to the surrounding trolley lines, as this class of the population rather enjoys the bustle of a busy street. Their children can, however, safely play in the gardens at the rear. The most expensive dwellings are placed nearer to the social and public buildings and have been designed with a fewer number of dwellings to the group, giving a higher class aspect and one which would harmonize better with the public buildings placed in parked areas. A few stores (twelve), with flats above for the storekeepers, have been placed at each corner of the property near the cross trolley lines, where such stores usually locate. One hundred and twelve are located on the main axis running directly through the property.

For convenience and esthetic reasons, all of the buildings of a public or semi-public character have been placed in the center of the property.

The social aspect of this development has been considered secondary only to the general arrangement of streets. A large social center building, containing rooms for various public meetings and entertainments, is placed directly in the center of the property and equally accessible to all the residents. Six playgrounds have been arranged, equally distributed throughout the development, and subdivided to encourage their use by children of different ages and sexes.

The sites for public buildings include six churches, boys' and girls' elementary school and high school, library, theater, opera house, lodge building, Y. M. C. A. building, civic building for police and fire apparatus, hotel with garage, etc. Most of these buildings have been placed so as to close a vista from an approaching street, and the field-houses for the playgrounds are also similarly located.

COMPETITIVE PLAN BY G. C. CONE

WITH the larger aspects of city planning we consider that we are not concerned in this investigation. The tract to betreated is not destined to have a community consciousness apart from that belonging to the city as a whole. We therefore believe that town anatomy, involving the study of a complete organic unit, is not our subject. Rather we regard the study as one of detail, immensely important, forming a part indeed of the larger subject, but not town planning as such. The factors involved are so largely social that our best help comes from a study of the habits of Chicago people. True, both precept and practice along housing and town-planning lines are farther advanced in England and Germany than with us, but the investigations and study upon which these are based are first-hand with them and introspective. Ours must be this, too. We must be mindful lest we suit our housing and general home arrangements to their needs rather than to those of our own people.

The plan herewith submitted retains in large measure the rectangular method of subdivision, and can claim most of the well-known advantages of that method; i. e., favorably shaped lots, economy of space otherwise lost in bad street and alley intersections, and simplicity in the matter of street names, and in the numbering of houses. Moreover, and this is most important, it partakes with the rectangular method of the advantage of harmonizing with the structure of the city as thus far laid out. The prevailing street scheme of Chicago has become so universal and far spread that it has in a way come to be authoritative. It has in its favor the real advantages that it is orderly, readily understood, and capable of being extended indefinitely without confusion. We have retained therefore the general lines of the gridiron system but have modified it to suit our needs. A skeleton map of the design showing the main roads drawn to the scale of the city map, and laid down upon any of the numerous half-mile squares so characteristic of the city plat, will show that a harmonious relationship has been preserved even though some streets have been devoted to new uses. Our endeavor has been to design a quarter section, which, if repeated over and over again, would rather simplify than confuse the city plan. The city's fabric should be not so much a network as an organic structure with streets of graduated importance and special use. In our residence streets, as hereafter described, and in the broadened through thoroughfares, we have attempted to organize rather than to destroy the gridiron system.

Of course we have a community center. The recreative and educational features there shown are indispensable in any populous quarter-section of the city. The tendency of trade to congregate about prominent street intersections, especially those where street car lines cross, is so strong that we can not control it if we would. It is expected that, as time goes on, business will more and more surround the tract, facing out upon the present and proposed street car lines as provided in the outer tier of lots seen on the map.

Back of the outer tier of lots to the east and west is a 45-foot public strip of land (Q) intended to segregate the barns, garages, and outhouses of the tract as nearly as may be. This strip would be under city ownership, or private ownership with city rules governing it, and the owner of each abutting lot would have the right to build under lease such outbuilding as he might require, or, if he waived this right, the land might be leased to another

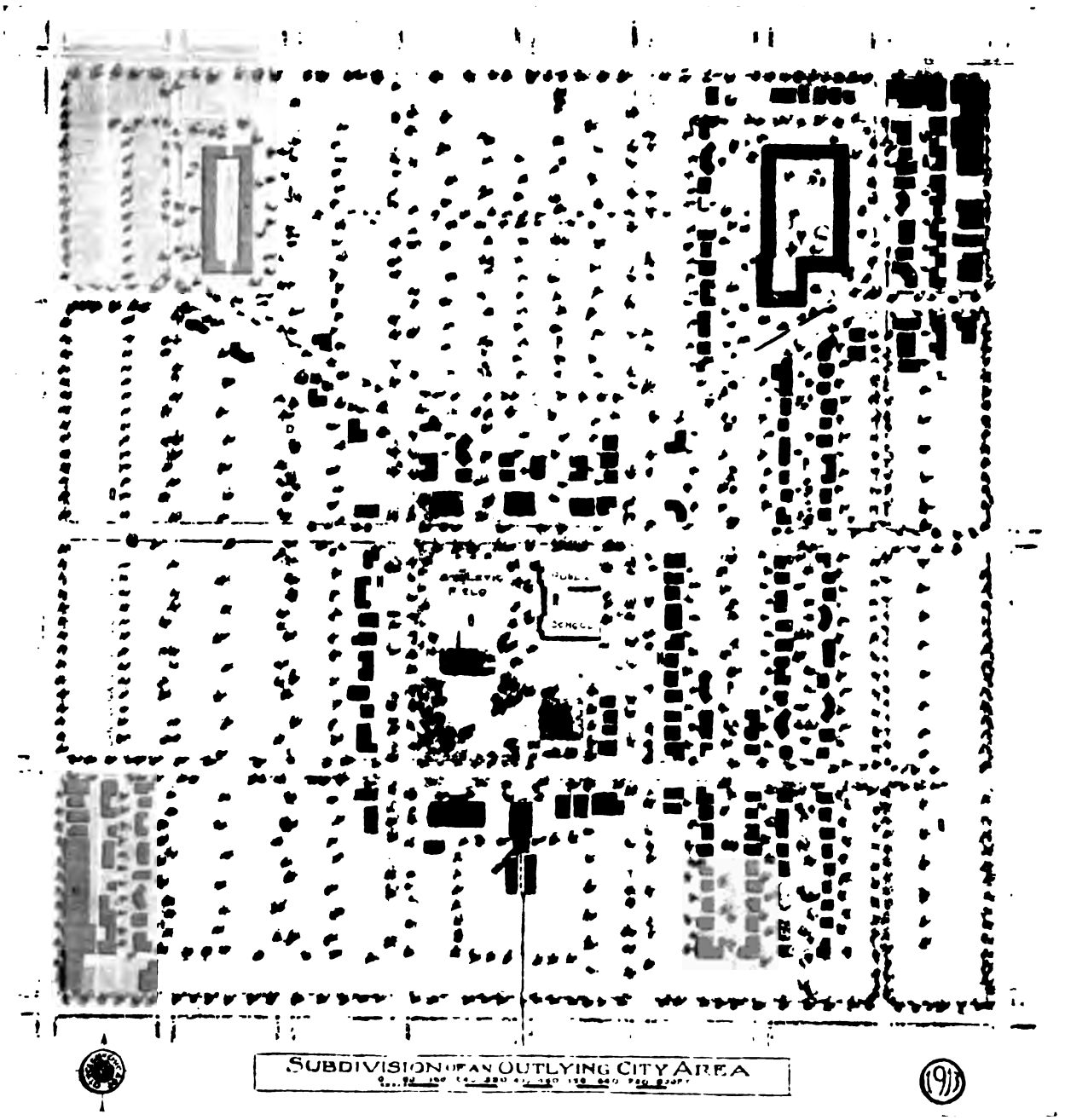
family for a similar purpose. Such reservations might, at the option of the lessees, be devoted to playgrounds or gardens. This provision of space for outbuildings back of the prospective business blocks, and serving also some 100 of the residence lots of the tract, it is believed will tend to cause prospective barn-owners to buy here, and will thus tend to segregate the outbuilding nuisance, and to keep residence lots free.

Involved with the question of barn room is that of lot length, which introduces one of the essential features of our plan—the short, wide lot. Having observed the habits of families rather than the traditions of real estate subdivision, we are led to believe that for many, if not most households, a deep rear lot is not as desirable as more room in front, and that, in many cases, it is really undesirable. Ideally used, it is all that tradition paints it, but the little garden, the croquet lawn, the grape arbor, and the happy privacy investing it all, form a charming picture of what does not exist in the city back yard. So primitive and wholesome a thing as the impulse to garden, which all men feel for a little time in the spring, no matter what their occupation or where they live, finds only abortive expression in the average back yard. City soil and city atmosphere are against it. Moreover, the Chicago man is not a gardener by instinct or tradition. His impulses are not pastoral, they are urban. The result is inevitable — the average garden on the average back lot is not successful.

Again, arguing counter to theory but in accordance with experience and observation, we do not believe that back yards in the city make the best playgrounds. The proximity of the back yard to the alley, its tendency to be in disorder and dirty, and its very removedness from the pleasures of the street where people come and go and things happen, makes it alike undesirable to mothers and children. Meanness and wrongdoing flourish in back yards. The mother feels safe about the child "out in front." The respectability

of the surroundings comes to her aid mightily, and except for the actual physical dangers of the traffic street, the child needs less watching in the front yard than in the back.

This brings us to the consideration of two types of residence streets as exemplified



PLAN BY G. C. CONE, CHICAGO

KEY TO PLAN

D. Streets with narrow Pavements on either side and Parkway in middle.
H. Two-story Cottage.
L. Central Heating Plant.
M. Business Buildings.
N. Large Residence Lots.
O. Recreation Center.
P. "Streets" without Pavements.
Q. Barn Segregation Strips.
R. Public School.
S. Semi-public Buildings.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 9.

on the plan, one in which the pavement is omitted entirely (P), its place being taken by a public greensward or playground, and a second (D), or modification of the first in which narrow semi-private drives skirt the grass area on either side. The essential thing in the design of the first type is the grass space between the fronts of the houses, usually occupied by the street. At either side of this lawn strip runs the usual sidewalk, but the street proper or pavement is altogether lacking. The reasoning which leads to this comparative innovation is very simple. Each house is reached by a paved alley as described later. This takes care of all merchandise wagons, as it would in any case. The houses on this street are not on the whole those that will have many carriages call at their doors, and, in the event that it is desired to reach a vehicle, a walk of half a block in any case will reach a public way. For emergency purposes, such as ambulance or fire department calls, the alley is always at hand. In short, the need for a drive to our very door, unless we use a vehicle as a matter of common habit, is more traditional than real. For those who own or use vehicles daily we have other provision as has been explained. For those who prefer safe play space for their children, ample setting of parklike area for their houses, and quiet freedom from dust and noise, this type of street is offered. The sidewalk and the greensward with its trees, like the ordinary street, are public spaces publicly created and maintained. The expense should be considerably less to the abutting property than that of the usual street.

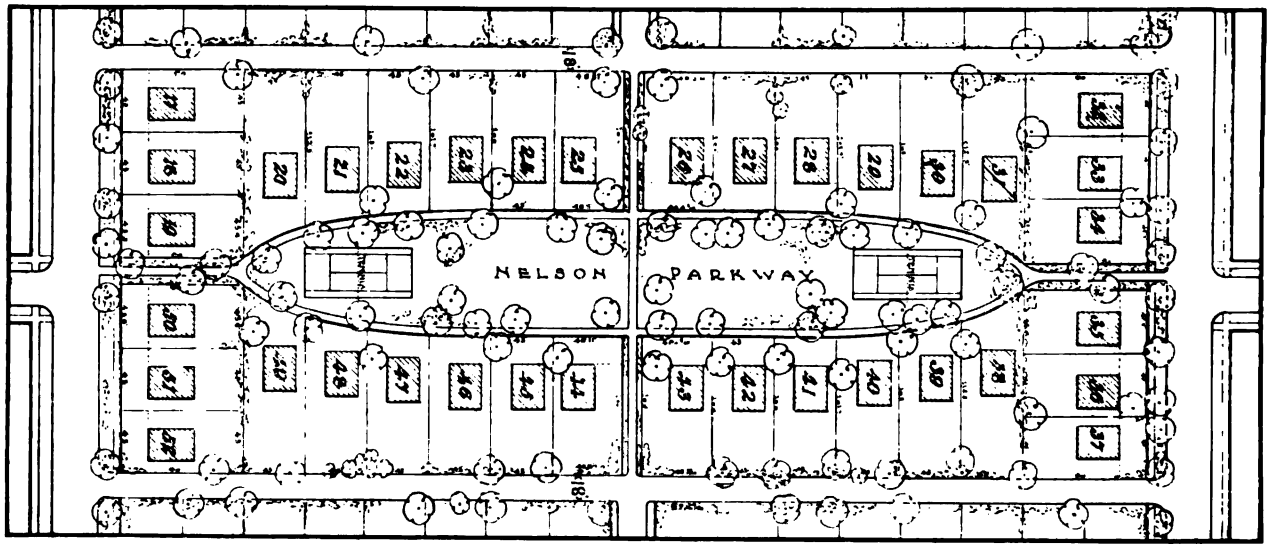
With this form of street, the lots fronting on it would be short at both ends, so to speak; that is, the back yard, for reasons heretofore explained, we believe in making only deep enough to afford a small clothes lawn, say, 20 feet from front to back. The front yard, moreover, because of the ornamental lawn and play space provided in front in place of pavement, does not need to exceed, say, 20 feet in depth. If the house is 30 feet from front to back, the lot must then needs be 70 feet in depth over all. We gain much in light and appearance for the premises by taking the ground gained from the far back end of the ordinary lot and making both the lot and the house wider to the front. Especially is this true where street improvements are inexpensive as here contemplated. We have in such a street arrangement the fashionable "place" of some of our cities adapted to the needs of cottagers. People like to make a brave showing in the matter of their domicile. A house wide to the street, and with room on either side, not only is saved from too close contact with neighbors, but looks its value. The usual deep lot behind is not missed, and the 40 or 50 foot park space in front gives the house an added distinction. The comparatively small area of yard for the householder to take care of is a feature which would tempt many families from flats and tenements, especially in view of the fact that it is proposed to heat all the buildings of the tract by central heat as described elsewhere.

A second modification of the above "street" contemplates a narrow drive on one side, and only a walk on the other. There are besides these streets, one ordinary street with a narrow single drive and any extra space gained added to the length of the lots. This is for the benefit of those who do wish to garden or otherwise use the usual deep lot. Then there is in the north portion of the plat, a cross street without parkways, and with only one 5-foot walk on one side; in all, but 23 feet. This is a local accommodation short cut in the midst of an otherwise long block and a recognition of our right to have

such an irregular thing if it suits our convenience, even with the gridiron plan. At (H), on the plan, is provision for those who really desire the advantages of cottage "apartments" with liberal common grounds surrounding the two-story buildings. Double houses are here and there introduced to break the monotony of single fronts and to retain a certain flexibility of design.

Two further features which inspection alone of the plan will not disclose are the provision of paved alleys, practically all lots being thus served, and the central heating plant, which in this enterprise should be peculiarly successful, saving much expense both in construction and in service later, and making for cleanliness and for economy of the householder's time.

The subjoined sketch from a recent design by O. C. Simonds & Co., shows an application in actual practice of the fundamental innovation suggested in the foregoing article. The Beloit Model Homes Co., of Beloit, Wis., is using this type of street in the construction of a portion of their new subdivision near the Fairbanks Morse Co. plant in that city. The area usually occupied by the street will be grassed over and somewhat depressed in grade with a view to flooding in winter if desired. The traffic which comes to the homes is largely alley traffic and is taken care of by eighteen-foot paved alleys back of the houses. Sidewalks approach the front as with the usual street, but at either end of the block the opening is narrowed to avoid using valuable frontage on the bordering streets and to give a suggestion of park-like seclusion to the enclosed area. The houses, by following somewhat the lines of the curving sidewalks, gain outlook over the enclosed park, and each in itself presents a more individual appearance. The plan has been accepted and recorded and thus constitutes an interesting experiment in actual subdivision work.



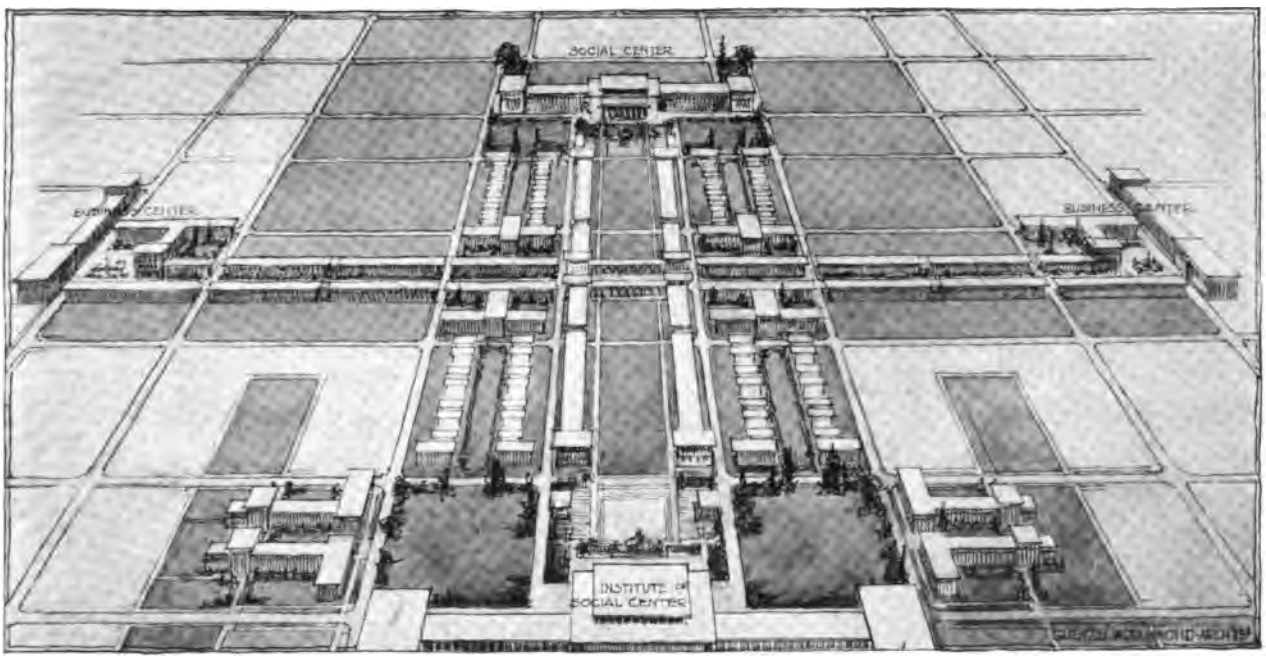
PLAN BY WILLIAM DRUMMOND

DEVELOPED FROM A SKETCH SUBMITTED IN COMPETITION

CAN the suburban extensions to the great city of to-day be made to bring about the realization of a more ideal residential neighborhood than we now have? This is really the most important of civic questions, since its successful working out means so much in its every bearing on city life.

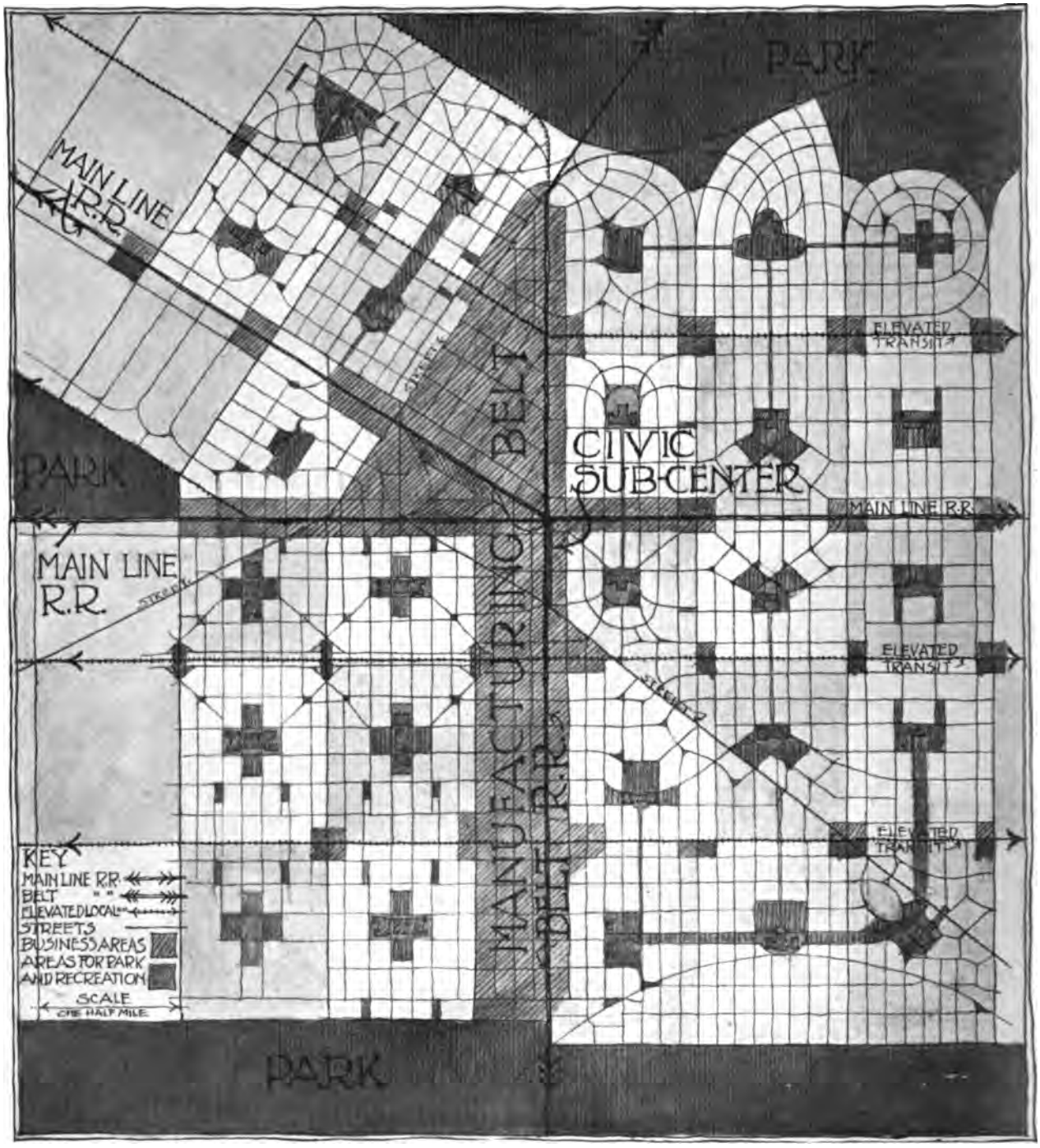
We are troubled with the indiscriminate spread of industrial activities which seem to advance upon perfectly helpless and old established communities. We suffer from an undesirable springing up of apartment buildings here and there in neighborhood developments which violate every sense of the appropriate and the harmonious. We suffer from the fact that street, harbor, and rail transportation facilities are so inefficiently disposed in our city that the broadest benefits to be derived from these fundamental requirements of city life are not possible of realization to many of the less favored parts of the city.

The Germans and the English have produced examples of garden cities or garden suburbs which embody many very progressive measures, each example differing somewhat in its plan and operation from the others. They have found that it does not pay to overpopulate; that rents, health, beauty of environment and economy of improvements all suffer therefrom. They have indisputably proven that it does pay to carefully plan the whole neighborhood development through the employment of the most skillful architects. They have put into operation in some degree many of the measures that have since been proposed for public consideration in this country and have thus triumphantly proven the correctness of many contentions heretofore held as theory. But in this country, our laws and our land-holding system seem not to lend themselves to such desirable ends. In fact, they are antagonistic.



BIRD'S-EYE VIEW OF TWO ADJOINING UNITS

Showing in the "Nucleus" a portion of the area developed with a formal arrangement of certain buildings and grounds, the blocks adjoining being for individual residence.



A CITY AREA DEVELOPED ON THE "NEIGHBORHOOD UNIT" PLAN
(Using the Quarter-section as the Approximate Unit Area)

Here, at the main line railway junction are important features, a main line passenger station, a freight depot, storage buildings, a municipal market, postal and civic departmental offices, etc., forming a civic sub-center. A belt line connects a series of such civic sub-centers, and running into and out from the city over streets about ½ to ¾ miles apart are the elevated lines, while "cross town" street car lines occur every half mile. This method, creating boundary lines out of certain streets having transit facilities, results in marking off the unit neighborhood areas ("checkered" in tint). Each unit thus equipped offers specially convenient home locations for the local workman as well as for those who by riding can work elsewhere. The large parks, separating the great arms of the city offer ample opportunity for recreational diversion for all, close to the home environment. The belt, offering the best of shipping facilities, would tend to limit industrial areas.

From the start it would seem almost hopeless to strive for a working test of anything like a comprehensive land development scheme unless a definite policy was to be adopted which contemplated a consummation of local community ownership and control instead of individual ownership. This policy is a proven fundamental as seen in the development of the English garden city, where the co-partnership plan has been a great success.

While we are securing funds for an initial quarter-section development scheme and while we are working for a law which will enable communities to guarantee the bonds of local companies or otherwise provide the funds which must be forthcoming to systematically support the work, we should also be endeavoring to find out what general type of plan can be relied upon to cope most successfully with the situation in hand. What shall be done with the apartment house (always the most economical habitation), the low cost single dwelling (always in the greatest demand, but seldom to be had in attractive shape), the vacant lot, the alley, the back yard, and the business street? The individual dwelling will take care of itself if these usually menacing factors are handled in the working out of the problem in an artistic and at the same time a practical manner.

Chicago is to-day consciously seeking the widest possible spread of social, recreational, educational, and industrial opportunities. Working to this end, the parks, playgrounds, and social settlements have taken a long lead ahead of those in other cities. So, in working out schemes for suburban development that may hasten a better day, it should be remembered that most to be desired is such constructive planning as will lead to wide improvement throughout the older parts of the city where arrested development and abnormal development prevails. If present-day faults are corrected or can be corrected in the new venture, then the measures employed cannot but be of profound influence in the reformation of the older parts. On the other hand, if half-way or superficial measures only are to be tried, no general improvement need be looked for.

In contrast to the simplicity, the directness, the power for good, inherent in a possible well-organized community plan, we see in the origination and execution of civic projects to-day the most astonishing discord and complexity, and therefore the most indirect and untraceable influences at work in the sinister machinations of exploiters. Where order should exist we have chaos.

THE NEIGHBORHOOD UNIT PLAN:

Order is the keynote of our plan. It provides that the whole city be divided into areas approximately such as the quarter-section. Each of these areas is regarded as a unit in the social and political structure of the city.

A quarter-section may prove to be too large or too small, but the unit is intended to comprise an area which will permanently exist as a neighborhood or primary social circle. Each unit has its intellectual, recreational, and civic requirements featured in the institute which is located approximately at its center and its local business requirements featured at its corners. In a series of units there would then be an alternate disposition of centers of activity which would remove as far as possible the operation of one function from that of the other.

As to building development, our plan provides that the apartment building and the low cost single dwelling, together with the institute and business centers, be employed in

the formation of such an architectural arrangement as might be called a nucleus or frame in the articulation of the plan. This would provide in a definite manner for the best development of those areas which on account of many uncertainties usually remain unused for building, or are built on for expediency without regard for the best interests of the neighborhood. The remaining areas in the unit are then well fitted to the uses of those able to build and keep up the better class of residences, being here retired from noise and traffic and so appointed as to remain permanently desirable as home sites.

The building of the "nucleus" offers an interesting and more or less complete initial stage of development. It answers the question, What shall we do first? It can be composed at first of either apartments or single dwellings, or both, for a choice is open and progressive stages of development can thus easily be arranged, the temporarily vacant land being available for agricultural uses until outside pressure exerts its influence in bringing about a more and more complete development of the unit.

Instead of retaining the illogical ward system, each of the great arms of the city, existing on the great railroad radii, is considered as being a borough or general division, reaching from the center to the furthest suburban limits. In Chicago there would be six or seven boroughs. The plan on p. 38 illustrates roughly a more or less ideal development for such an area as might be located in Chicago with its center at Western Avenue where the St. Paul and North Western railways cross and run parallel into the central district. The drawing is intended to illustrate in plan the characteristics of such a subcenter of the city as is indicated at this point in our proposal for the rearrangement of the railway and harbor facilities of Chicago. This proposal is published in the City Club's booklet, *The Railway Terminal Problem of Chicago.*

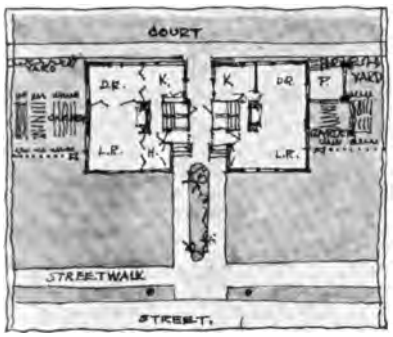
STREETS:

Chicago, having no changes of level, enjoys no elevated public viewpoints, as many cities do. Her greatest charm to the eye must reside in long sweeping distances everywhere evident in the passing view. This suggests the use of broad and interesting vistas so disposed as to emphasize the freedom of movement and the breadth of space which are chief characteristics of the great western prairie on which the city lies.

Long usage proves that a system of squares or rectangles develops a more economical local street system than is otherwise possible, but the right-angled street and alley plan is chiefly objectionable because of the impossibility of variety in aspect, since all streets alike disappear into uninteresting distance, and since rigid adherence to such a plan makes impossible the desirable feeling for individuality in one's environment. So it would seem

STREET VIEW

COURT VIEW



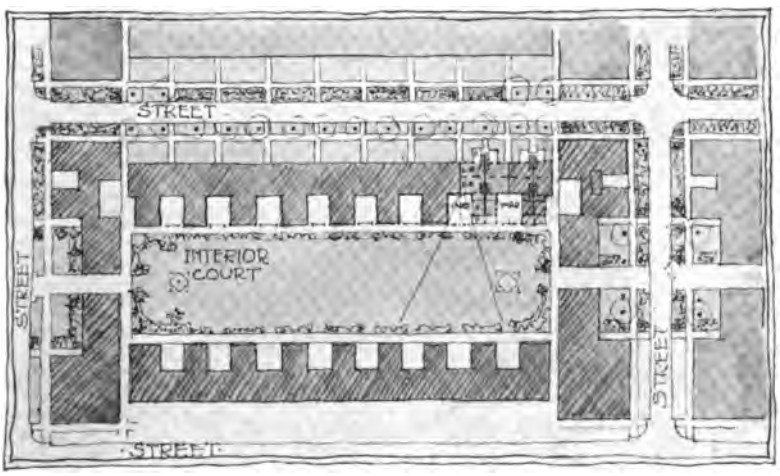
PLAN OF PAIR

that some local streets should be emphasized, being broad and stately, others minimized in importance, being modestly retired, and a number broken where possible so as to close the vista and create preferential sites for churches or quasi-public buildings.

Our plan places the business centers at the extreme corners of the unit and thus imposes the greatest amount of traffic on the boundary streets and relieves the interior streets of business traffic and consequent noise and danger. The interior roadways can, therefore, be much narrower than present municipal requirements demand.

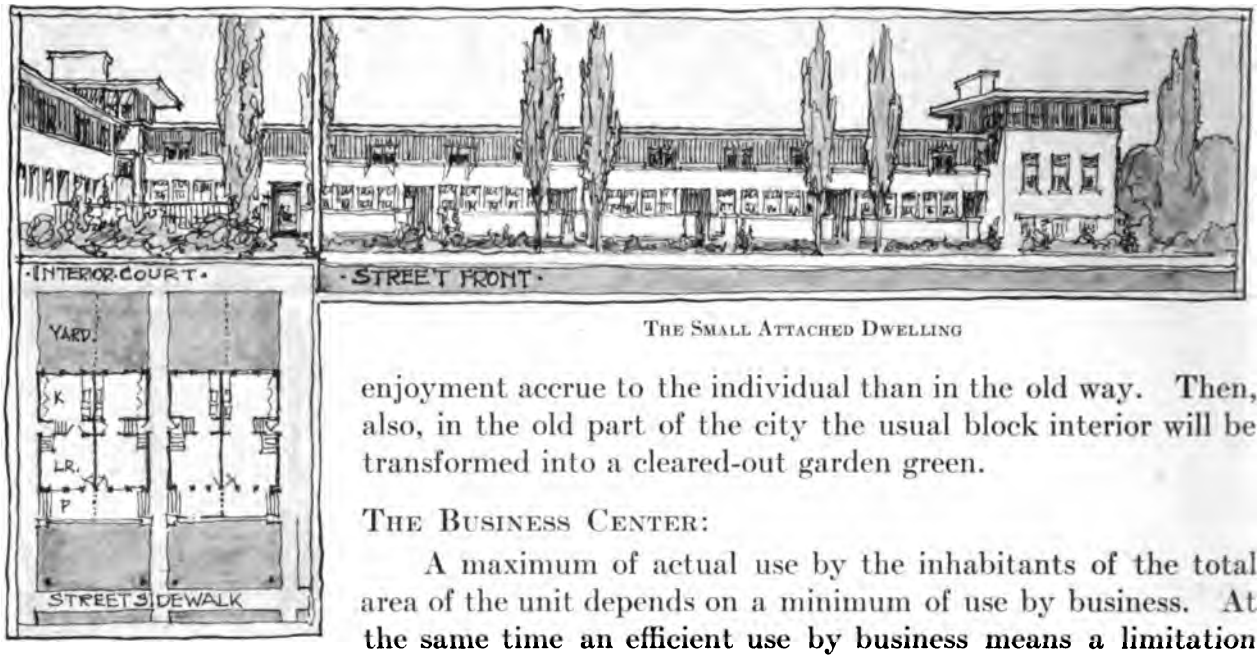
THE CITY BLOCK:

The usual city block is of an economical shape and size, for while it is a minimum area consistent with the necessary requirements of light, air, and domestic separation, still it can be made very attractive if carefully laid out so as to develop its advantages to the utmost. This can be done in the building of either multiple or single dwellings. Individual yards placed in pairs, between pairs of dwellings, the latter either separated or attached, allow the block interior to become a garden or lawn for the common use. This idea is illustrated in the various rough sketches which appear on pp. 40 and 41, and also in the bird's-eye views. The arrangement provides for either double or single street entrances or driveways and garages, and develops for each house a maximum prospect and exposure to sunlight. This scheme may appear to some to favor a too intensive space use, but it must be remembered that it still remains to be demonstrated just what the maximum number of families for one block should be. This has a bearing on the limitation of the unit neighborhood population, but many external influences would modify any tendency to approach it as an average for the whole unit. We cannot foretell what size of block or what kind of dwellings the economy of a future day will favor, but it would seem that the city block should not be so large as to make cumbersome the gathering together which is to be expected for purposes of discussion, on the one hand, or on the other, the co-operation of the residents in the use of possible common dining-rooms, children's play space, allotment of garden space, etc.



THE ORDINARY CITY BLOCK, EVEN WITH ATTACHED DWELLINGS FOR FIFTY OR SIXTY FAMILIES, CAN HAVE A BEAUTIFUL INTERIOR GARDEN COURT

Alleys, usually an unnecessary and unsightly adjunct causing the waste of much valuable area, should be done away with when the awakened neighborhood spirit commends the beauty of orderliness. It will then be seen that, by co-operative agreement and studied care in the use of premises, wider opportunities for use and



THE SMALL ATTACHED DWELLING

enjoyment accrue to the individual than in the old way. Then, also, in the old part of the city the usual block interior will be transformed into a cleared-out garden green.

THE BUSINESS CENTER:

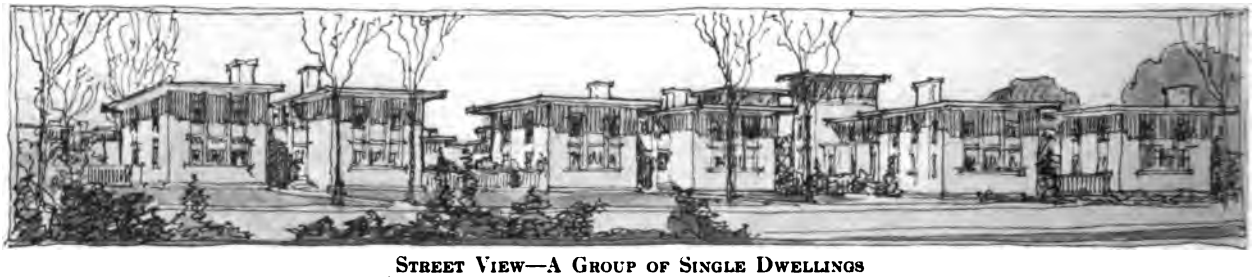
A maximum of actual use by the inhabitants of the total area of the unit depends on a minimum of use by business. At the same time an efficient use by business means a limitation of competition for local trade and less loss due to duplication. Therefore we set apart the areas contiguous to the intersecting boundary streets for business purposes. A chief factor in this disposition is that these streets would probably have car lines, and inasmuch as the transit lines must soon be made available for local freight duty these would then be peculiarly economical for business use.

Open squares could be expanded from the intersecting business streets and by employing arched-over buildings, car patron shelters, and center features, a much more interesting situation would be realized than is seen to-day on our long-drawn-out business streets where so many stores, not serving good use, offend the eye mile after mile. Business does not need to string out on long lines, but has advantages in being concentrated.

The main business street should be transformed into a residence street made extra wide and of the more formal type, parked at the center and at either side. The latter provides for domestic privacy, the former a less noisy and dusty railway bed than we now have, which, later, can be paved to provide for such increased traffic as might develop along certain streets.

THE INSTITUTE OR SOCIAL CENTER:

In order that the neighborhood may institute and maintain its social and political organization, it must be equipped with the necessary buildings. The institute, which may



STREET VIEW—A GROUP OF SINGLE DWELLINGS

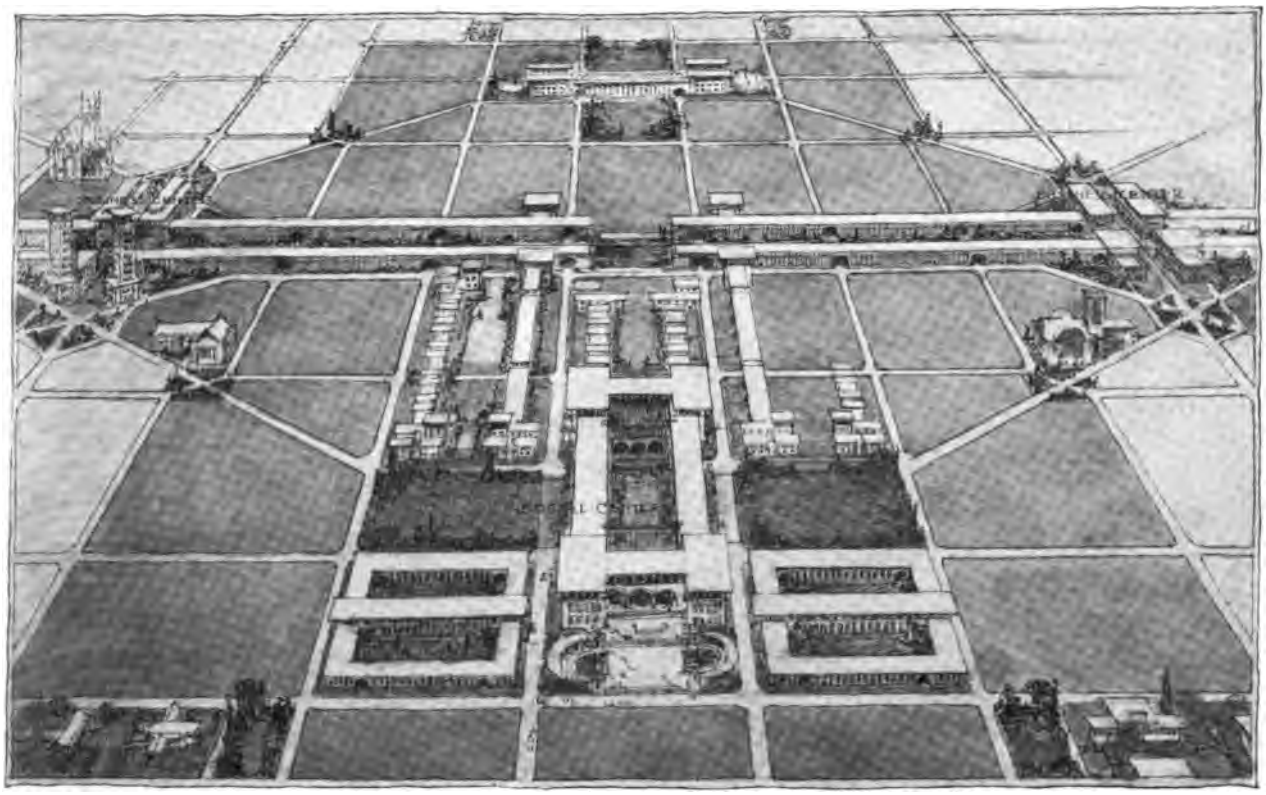
be one building or a group of buildings, is designed to answer this purpose; and since local convenience is of first importance, it is placed approximately at the center of each unit. It is intended to house here the schoolrooms, workshops, and usual elementary educational equipment, with also a large assembly hall as well as a number of smaller halls for rotated use by classes, clubs, and societies, for reading, music, drama, dancing, and lectures. Provided also with large natatoria, gymnasia, gardens, and athletic fields, wide and varied popular recreation would be available. The object of the institute is to bring about healthful and vigorous participation in all those activities which could be systematically pursued through the employment of expert instructors, as well as to encourage voluntary religious, educational, recreational, and political activities.

In each unit the open local forum would vent the expression of the best thought and make that thought effective. The whole body would contribute to open, known actions.

The citizen is to-day removed from an effective voice in the political expression of the city, because he now uses no consistent and orderly method of local expression. The very mass of the city makes it a prey to spoilsmen. The real intelligence of the community is inoperative and frequent "reform" movements to improve conditions are baffled. The organization of the entire city into working units would bring about systematic activity and a broad civic unity of purpose.

ARCHITECTURAL ASPECT:

Should a more or less extensive change occur in the social order, there will probably develop a new popular esthetic viewpoint.



BIRD'S-EYE VIEW OF AN ALTERNATIVE SCHEME FOR "UNIT" DEVELOPMENT

It is pertinent to ask, How ought we to live? What sort of character should our physical surroundings exhibit? Have we not outgrown and become tired of present usage as expressed in the houses and the street pictures everywhere so uninteresting and so much alike?

Should we not seek the broadest diversity in aspect consistent with harmony and beauty in street pictures? This aspect can only be arrived at by allowing the architect full freedom in the disposition of the component parts of the street picture.

To impose universal arbitrary restrictions as to lot lines, alleys, long straight streets, height of buildings, etc., brings it about that no matter how many kinds and styles of building are introduced the resulting street picture is just what we have now — the inartistic effect is unescapable.

In the new unit neighborhood the architect's work will be thoroughly accredited, will prove itself indispensable to the creation of living accommodations for all which will be both better and more economical than those to be had at present where each man is his own boss. Many new projects will require the services of able men and will throw responsibility on each in his own neighborhood, for the individual architect should be employed on a unit project.

NOTE.—Photographic views of buildings near Chicago, designed and erected by the author in the style suggested in the foregoing sketches, are reproduced below—the kindergarten, built near a brook and in the midst of great natural beauty, seeks to be a fairyland castle, housing many activities in idealistic manner. The club with auditorium and dining facilities has realized a fine neighborhood ideal, too.

ABOVE: THE BROOKFIELD KINDERGARTEN SCHOOL
BELOW: THE AUTHOR'S HOME—RIVER FOREST

ABOVE: THE RIVER FOREST WOMAN'S CLUB
BELOW: THE MAYWOOD M. E. CHURCH

COMPETITIVE PLAN BY H. J. FIXMER

THIS design is a radical and original modification of the gridiron type of subdivision.

It purports to be an engineering rather than an architectural solution of the housing problem.

The design proper seeks to give the dweller his own individual plot of ground, which becomes part of a harmonious communal development of the fore-garden, and to provide for a fuller communal life by providing places for the exercise of neighborhood activities.

It is sought to make the design practical rather than esthetic. The average skilled worker desires an individual home, with open spaces for flowers, garden, and recreation.

The layout of a tract should fulfill certain practical conditions; viz., economy, convenience, utility, sanitation, beauty, social needs, and traffic.

Straight streets give quickest access to all points, eliminate danger at curves, and are easy to maintain. Stores and apartments are located on the car lines or exterior streets; the school, park, and social center near the center of population. The "community" lots can be sold at a moderate price and will always be used for home purposes.

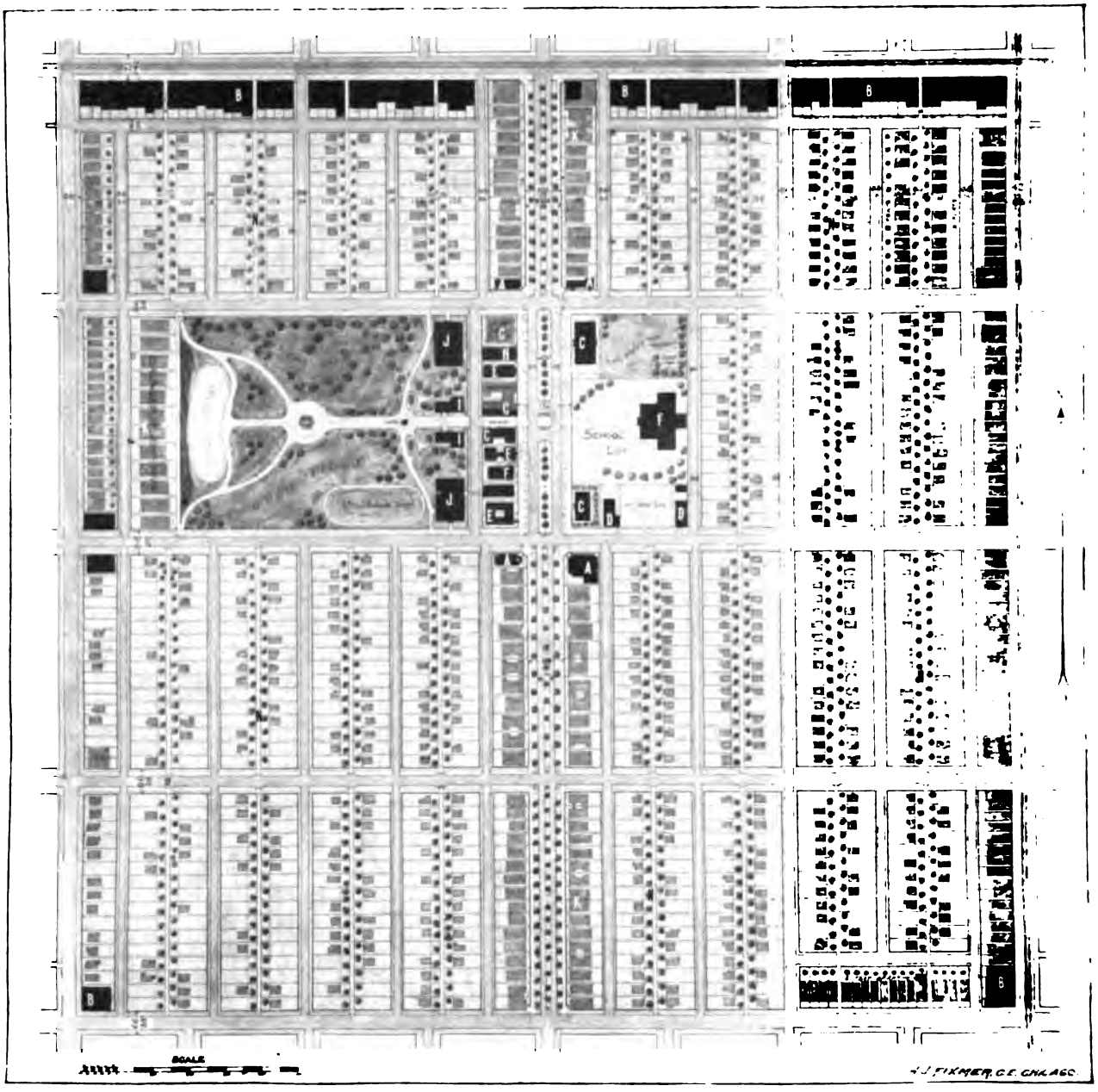
This plan is superior to any other plan in its sanitary possibilities. There is room, because of the wide lots and open spaces, for plenty of air, sunlight, and vegetation. There are no unpaved, disease-breeding places. There is no vehicle traffic *in front* of the homes, with its attendant dirt, dust, and danger. All sewage, gas, and other conduits run from the rear of the houses; and all garbage and material are handled from the street in the rear of the houses.

For the worker of small means there are few plans realizing the measure of simple beauty which this plan does. The interior blocks, it will be observed, are "community" units. Instead of facing the dwellings on a public street, the street is placed at the rear of the lots, absorbing the customary alley with its various functions, and yet preserving its use as a public street or vehicle traffic way.

The houses, not nearer than sixty feet apart, front on a continuous garden tract. Along the center of this tract runs a brick or cement walk, not more than ten feet wide. This walk is bordered and shaded by magnificent trees, around which spreads a velvety lawn interspersed with shrubbery and flowers, each resident co-operating in a general effort to make the homes blend into and become a part of the general garden.

Along the east and west streets a brick or stucco wall is built, with a neat column entrance where the middle walk intersects. This entrance would be surmounted by a flowering vase and light globe, while the wall in time would be covered by climbing vines. The foot traffic is thus separated from the vehicle traffic, and the charm of quietness, cleanliness, and exclusiveness without loss of democratic character, is simply and economically achieved.

The nature and layout of the community units promote sociability and neighborliness, since each home enjoys the fore-garden with its common use, care, and ornamentation. In addition, an ample park, a social center with its characteristic meeting places,



PLAN BY H. J. FIXMER

KEY TO PLAN

A. Churches.
B. Stores.
C. Municipal Hall and Library.
D. Police and Fire Department House.
E. Y. M. C. A., Settlement House and Clubs.
F. School and Academy.
G. Office Buildings, Studios, and Hotels.
H. Theatre.
I. Public Comfort Station.
J. Park Refectory and Gymnasium.
K. Apartments (two or more family flat building).
L. Streets and Combined Streets and Alleys.
N. Semi-private Fore-gardens between Cottages.

STATISTICAL DATA

Average frontage of dwelling house lots, 37 ft.
Average superficial area dwelling house lots, 4,000.
No. of families to be accommodated, 1,270.
No. of feet of public sewers, 24,000.
No. of square yards of street pavement, 85,000.
No. of square yards of sidewalk proposed, 32,000.
Percentage of total site in streets, 28%.
Percentage of total site in other public spaces, 14%.

service stores, and an attractive boulevard promenade are provided. The various public places to be provided for are shown on the plan.

The east and west streets provide for the through traffic. The north and south streets provide for local traffic and such through traffic as would need to use them. A wide boulevard is provided for pleasure traffic. One of the important features of this plan is the separation of foot and vehicle traffic and the design of streets and roadways to accommodate the proper amount and kind of traffic.

A community developed along the plan here proposed is virtually independent of exterior attractions. As a whole, it is an independent unit and can expand harmoniously, since each "community" unit is adapted to any topographical condition and admits of indefinite repetition.

The worker and his family can rest and play in peace and safety in front of their home, having use of a private garden sixty feet wide by six hundred feet long. It is but a short walk to the car, the school, the churches, park or other neighborhood activity. With such surroundings, conveniences, and attractions, real home life can be fostered and realized and children brought up as American children should be brought up — physically, morally, spiritually, socially, and intellectually healthy. A home once established here is permanent, for the property cannot be used satisfactorily for any other purpose.

This plan, while not an ultimate or ideal solution of the urban housing problem, suggests a step toward that end, a step that is simple and easy to realize.

COMPETITIVE PLAN BY EDMUND GROVER

IN this design the author has endeavored to offer a practical combination of the rectangular, the diagonal, and the concentric methods of street planning upon a basis of symmetry and simplicity.

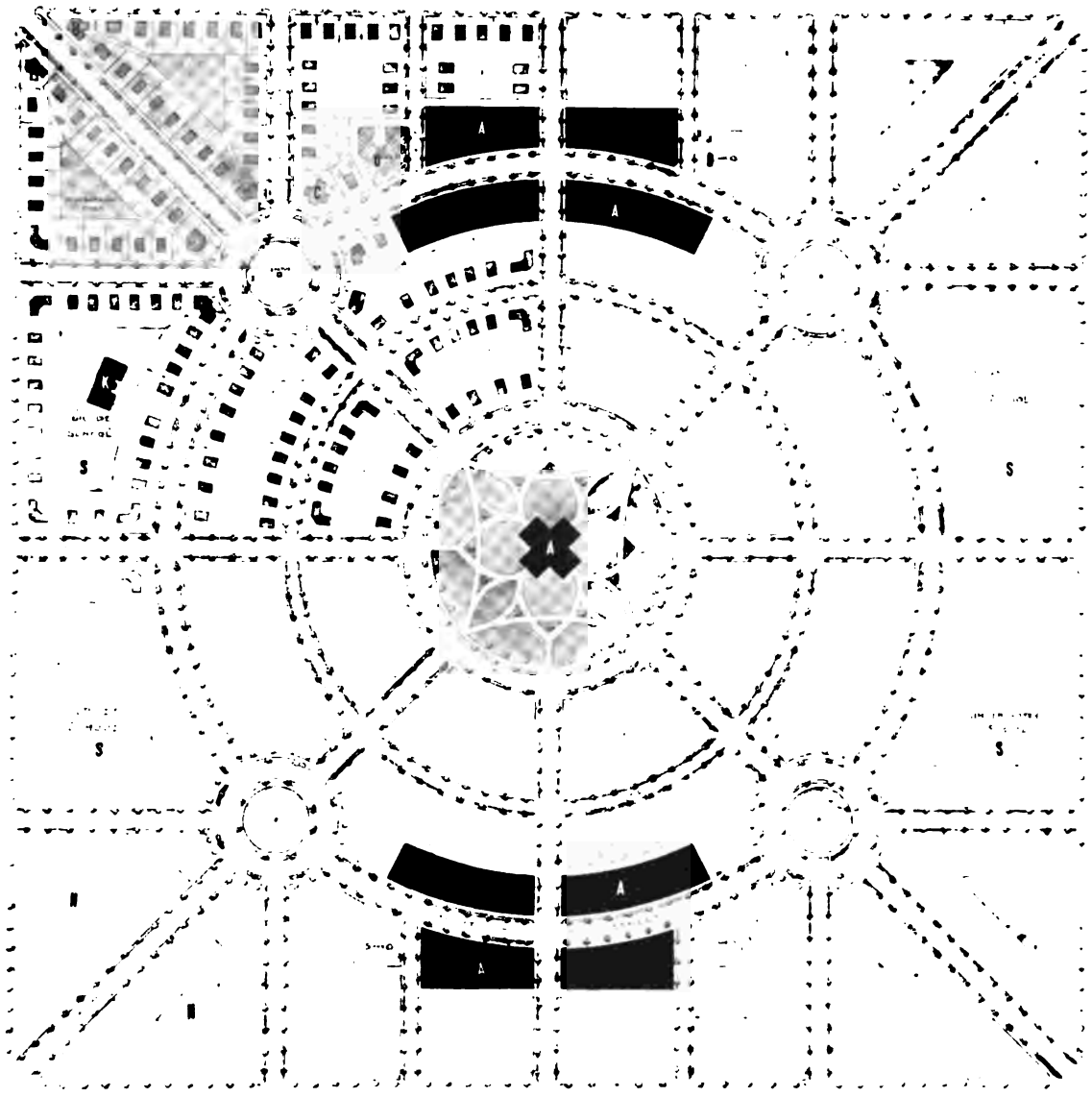
The design presents a large percentage of park, parkway, and street area, the cost of construction for which would be, of course, somewhat larger than that of the usual gridiron plan without open spaces, and the advantages, perhaps, from an economic point of view, not so apparent nor so immediately to be realized; but since the deliberate purpose of the plan is to offset the tendency to congestion, to provide variety in the place of monotony, to aid in the uplift of a community through its environment, and to set the stage for a more satisfactory social performance, the utmost economy in these areas for public enjoyment has not been attempted. The hope would be to create a country-like oasis in the tiresome city desert, a sort of residence park suitable for people who were neither very rich nor very poor, and attractive to people of good taste who could afford to build for themselves houses costing, say, from $3,000.00 to $10,000.00, and who would prefer to have a little land for gardens and lawns—in fact, a semi-rural community of well-to-do, intelligent, and self-respecting people.

The central feature is a large single structure, or a group of semi-detached buildings, to be used as a recreation center with provision for a large water basin, gymnasia, music courts, courts for handball and other games, and surrounded by a formal park of about six acres. This, in turn, is surrounded by a "ringstrasse" of eighty feet in width. Directly north and south of the center are two districts where stores and offices would be segregated. These business districts would be served by another eighty-foot "ringstrasse" upon which is shown a circuit of street railway. The intersections of this latter ring and the two principal streets running diagonally through the quarter-section afford suitable sites for statuary or fountains. The four marginal blocks lying east and west from the center consist of one tier of house lots enclosing parks of six acres or more. In these, schools could be located as shown, or, perhaps better, the high school and trade school would be combined and two or three grade-school sites be afforded. Eight other smaller neighborhood parks are provided for.

Essential to this plan is a satisfactory result in street tree-planting, and the importance is here emphasized of having planting spaces of ample width, extra fine specimens of trees set far enough apart and large supplies of tree nourishment.

After all, a good deal of the desired result depends on how the plan is lived up to, on the social conditions, and on the opportunity to secure the proper architectural treatment. Such treatment would require a long and special study by competent architects, and the social conditions involve many difficult problems.

Is not the attempt to maintain opportunities for a high percentage of income on the value of fifteen hundred dollars per acre inconsistent with the very purpose of this study? And is it not the proper and legitimate function of the city to help to rescue some of its poor exploited people from the toils, and awaken in them an ambition for a life of more leisure and more opportunity for self-development? And, finally, who shall say that it would not pay?



PLAN OF DEVELOPMENT OF QUARTER SECTION
CHICAGO, ILL.

PLAN BY EDMUND GROVER

KEY TO PLAN

A. Stores, Warehouses and other Business Houses with first flat above used as offices and residence flats, second flat above for residences.
B. Detached Houses for one or two families.
C. Locations for the more desirable Residences or for Churches.
D. Hotels, and Garages or for Stores, if needed.
K. School Building.
N. Neighborhood Parks.
S. School Parks.

STATISTICAL DATA

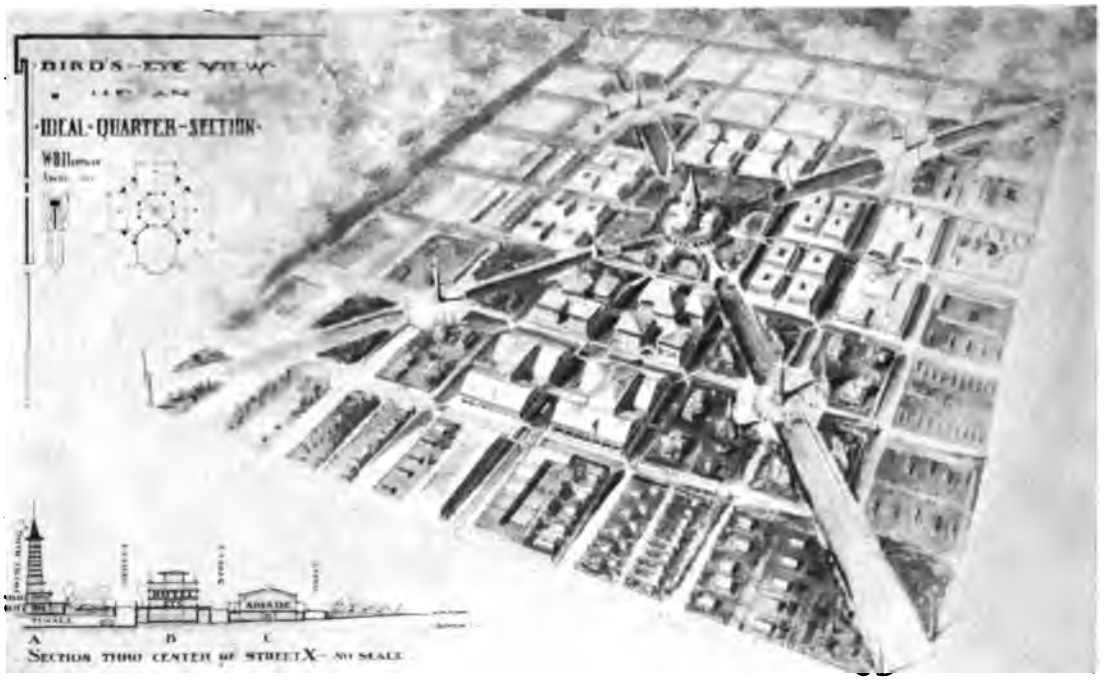
Average frontage of dwelling house lots, 62 3/10 feet.
Average superficial area of dwelling house lots, 6400 square feet.
Number of families to be accommodated, 800.
Number of feet of public sewers proposed, 27,200.
Number of square yards of street pavement, 103,800.
Number of square yards of sidewalk, 49,150.
Percentage of total site in streets and alleys, 27¼.
Percentage of total site in other public spaces, 14.

COMPETITIVE PLAN BY W. B. HARTIGAN

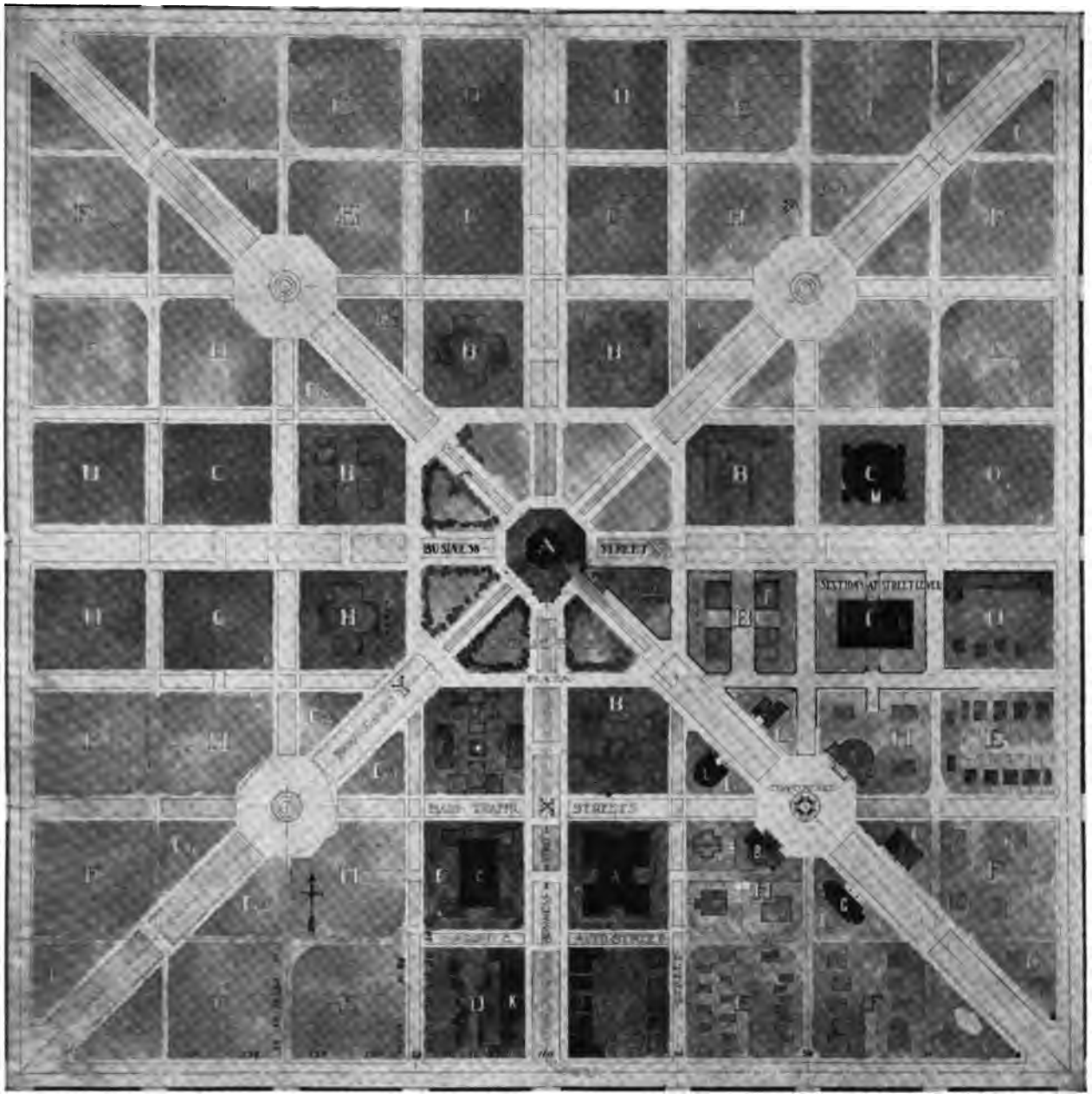
THE section was treated primarily as a residence proposition. All features were subordinated to the wants of the family dwelling within its confines. It was supposed that a ratio of one block for business to five of residence was a good proportion, but the scheme is sufficiently elastic to permit more dwellings. All living within the section can find transportation, business, and social opportunities close to their doors. Children and women can find recreation parks or buildings close at hand and reach them without danger of being killed by reckless auto or vehicle drivers. The author feels that the sunken street idea may be somewhat ahead of the times and its cost might not be justified, but at the rate population is increasing the time will come when human lives will be considered more important than the cost of such construction; therefore why not make a start now?

Under prevailing building methods an enormous loss is occasioned by individual cost of party walls, extra foundations and division walls, separate pipe lines, etc., etc. It is very evident that considerable saving of time, material, and labor is effected by gathering individual business enterprises under one roof.

The loss of building area taken for boulevards, streets depressed, etc., would be offset by increase in height of buildings towards the center. For instance, building A can be devoted to offices and can be made 125 to 150 feet. Flat buildings are a paying investment and as now constructed satisfy a large proportion of the American people. These buildings can be carried to a height of 90 or 100 feet. Business buildings can be built to a height of 50 or 60 feet.



BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY W. B. HARTIGAN

KEY TO PLAN

Large letters indicate whole blocks; small letters, single buildings.

Blocks

A. Public or Semi-public.
B. Apartments.
C. Public Buildings or Business.
D, E, F, H, Dwellings.
G 1, G 2, G 3, Public Recreation Space, Buildings, etc.

Buildings, etc.

a. Arcade.
b. Church or Y. M. C. A.
c. Coliseum.
d. Dwellings.
f. Flat Buildings.
g. Gymnasium.
h. Hotel.
l. Livery Stable.
m. Market.
s. Synagogue or School.
x. Depressed Traffic Street.
y. Depressed Boulevard.

COMPETITIVE PLAN BY HERBERT E. HUDSON

IN the vicinity of Chicago there are broad expanses of prairie lands. A large portion, geographically situated to meet the requirements of this competition, is now awaiting the hand of the subdivider. A community builded upon this prairie should express in its composition something of the prairie upon which it has been founded and in which it gets its setting. The prairie, with its rolling grandeur, has only been brought into touch with mankind as the hand of civilized man has reached forth and taken from its soil something of use to him.

As man and his existence have broadened beneath the influences of civilization, so has the prairie grown beneath the cultivation of man. It is not therefore, such a great step from the waving fields of grass, growing at will upon the prairies, to the waving fields of grain growing in ordered lines at the will of man. In no place can we find a truer interpretation of the prairie in all its splendor than in the crop harvested upon its surface. This represents the condensed expression of its resources, the product of its latent possibilities. Even as the grouped dwellings and habitations of mankind represent the accumulated ideas of "harvested civilization," so does the sheaf of wheat represent its native prairie.

A garnered sheaf of wheat, set upon an expanding prairie, with a rising sun pouring down light and sunshine, its renewing forces, has been chosen as the ideal of this theme.

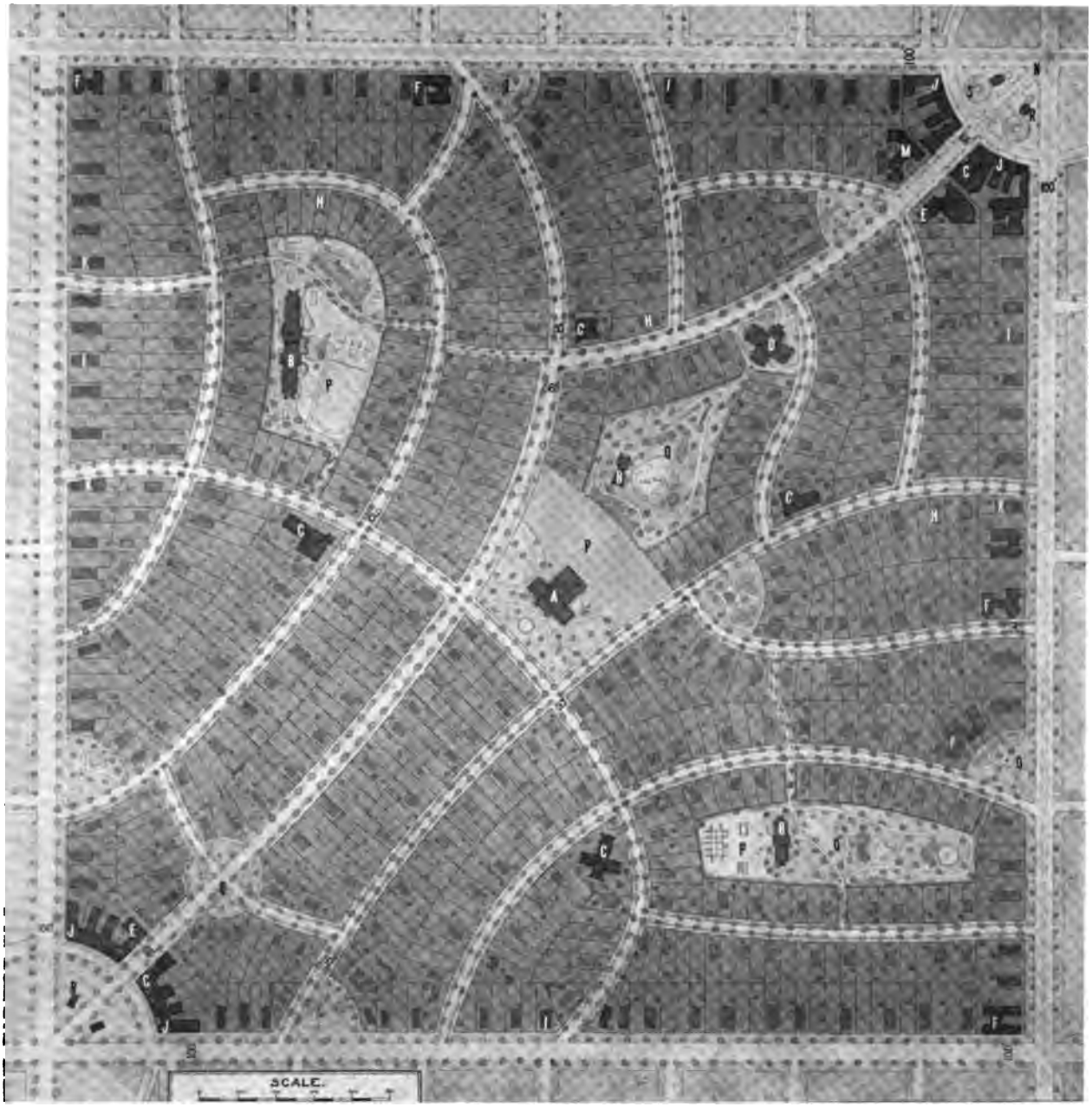
A residential community is arranged with the home as its center. From this point of view we look out over our section. The strength of the community is in its homes and as the strength of the sheaf is in its base, let us place the base of the sheaf in the lower southwest corner and the home districts of our section will fall into place. The radiating streets will then form the shape of our sheaf. Just as the lines of transportation and travel are the pulling forces of civilization, so are the rays of the sun typified in the streets radiating from the northeast corner. The crest of the sheaf is its fruited tips, and in our plan, at the typified crest, we find the crystallized expression of civilization, civic control, and protection — the municipal building, etc.

In the solar park at the northeast we will place shelter houses, comfort stations, and some large grass-covered mounds topped with monuments which shall be typical of the prairie. This central, solar park shall be reflected in numerous smaller sun-kissed parks, scattered throughout the tract, each typical, in its touch of color, of the tips of the sheaf.

The binding force of our civilization is to be found in its schools and neighborhood associations, and so at the binding point of the sheaf we find the location of the school with its libraries, athletic stadium, neighborhood center, etc.

The design provides access to the lines of transportation without allowing heavy traffic within the district. A study of the layout will show that the secondary lines of travel on the quarter mile streets have been somewhat preserved.

The line of travel running northeast and southwest is given a width of 66 feet. With a 32-foot roadway this leaves about 10 feet for the planting of trees. Other streets in the scheme have been given widths of 50 feet. These will have 22-foot roadways, leaving 14 feet for tree and sidewalk space.



PLAN BY HERBERT E. HUDSON

KEY TO PLAN

A. School House and Community Center.
B. Park Houses—Neighborhood Assembly.
C. Churches.
D. Civic, Police, Fire.
E. Fraternal—Lodge Halls.
F. Family Hotels—Residential Apartments.
G. Theatre.
H. One-Family Homes.
I. Multiple Family Houses.
J. Stores and Business.
K. Combined Family and Business Quarters.
M. Y. M. C. A.
N. Prairie Circle.
P. Athletic Space. (Stadium at Community Center.)
Q. Park.
R. Rest Houses and Sub-Surface Comfort Stations.
S. Monumental.

STATISTICAL DATA

1. Average lot frontage, 40 ft.
2. Average lot area, 5,200 square feet.
3. Number of families, 1,126.
4. Lineal feet of public sewers, 19,890.
5. Square yards of pavement, 56,280.
6. Square yards of sidewalk, 27,840.
7. Percentage in streets, 14.62%.
8. Percentage in other public places, 11.3%.

COMPETITIVE PLAN BY ROBERT KINGERY

UNDER the conditions of the competition, the quarter-section to be improved lies eight miles southwest of the central business district, forty minutes from the down-town offices. The daily occupations of the men will be largely in the city proper, and direct routes through the plot provide convenient access to the surface cars which run only on the boundary streets. The surface of the tract being level, any arrangement of streets is physically possible. The soil is light and the cost of the small amount of grading required by the plan would therefore be inconsiderable.

The general direction of the streets is determined by the bulk of the traffic which would be toward the city. By the diagonal system an appreciable distance is saved the business man, the delivery man — in fact, every one. From the direction of the city toward the little park there is a broad formal "mall" 100 feet wide, with a 24-foot center parkway, a 20-foot streetway on either side, 12 feet being given to each parking, and 6 feet to each sidewalk. Facing this and the similar "mall" at the farther end of the tract are larger lots for the more pretentious residences.

Space is reserved for a park near the center of the plot, and its irregular shape adds to its attractiveness. To the northeast is the breathing space, with open meadow, flowering trees and shrubs, and a small lake. The lake is shallow at the east end for wading, and deep at the other end for swimming, the two parts being divided by ropes for safety. The material excavated from the lake site would be used to build the viaduct which divides the park from the playground. The viaduct, an elevated street, is really a building for dressing-rooms, lockers, showers, and similar comforts, separate parts being set aside for men and women. The playground is equipped with a quarter-mile cinder running-track, baseball diamonds, and outdoor gymnasium apparatus.

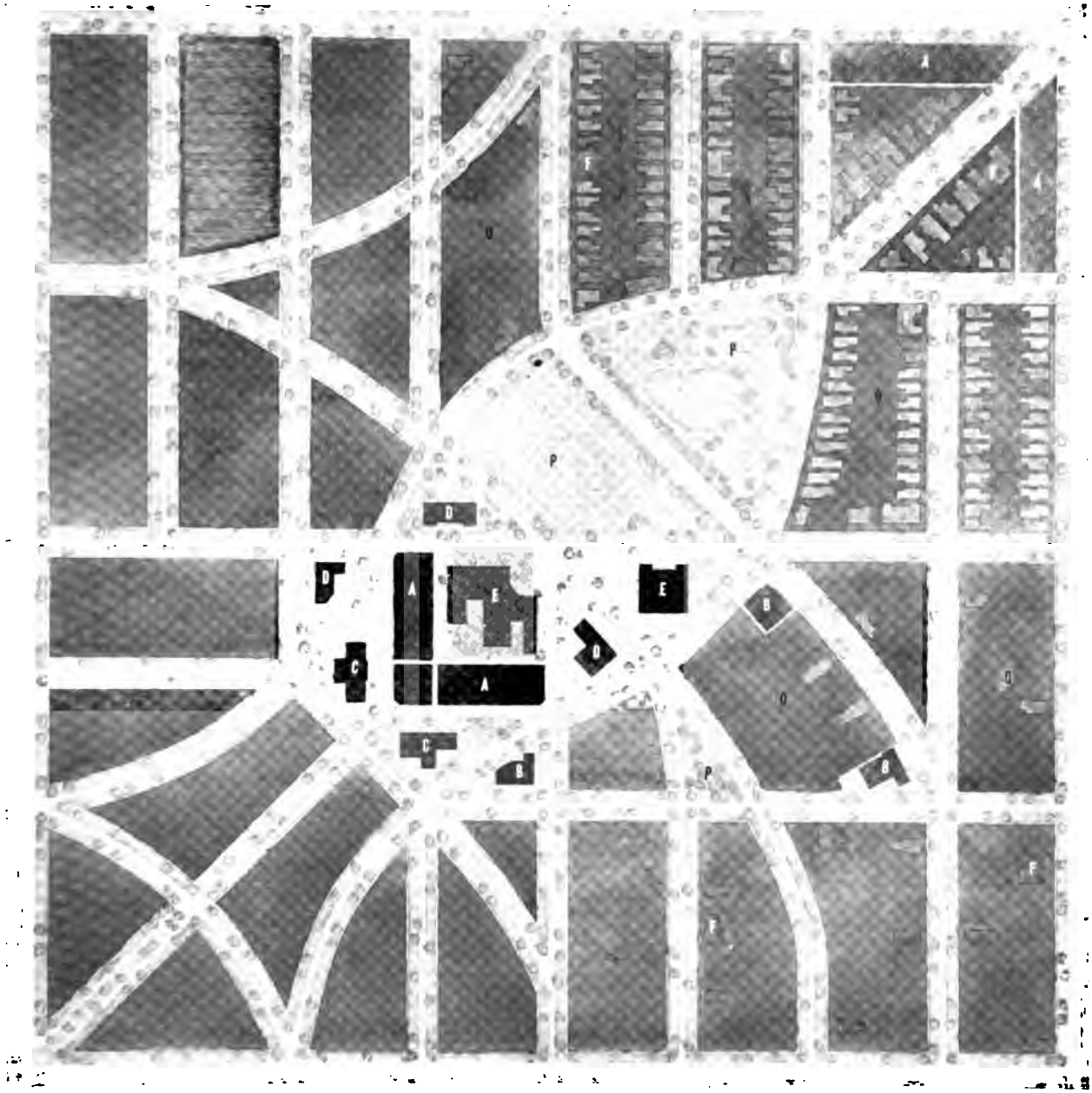
The streets are 80 feet wide in the residence districts, giving a 20-foot traffic space, 24 feet of parking area on either side and 6-foot sidewalks. The parking area is public property, affords the effect of a well-kept front to each house, and gives the children a roomy playground on the home side of the street. No alleys serve the residence. Modern civilization is taking a step in advance in getting away from these unsightly thoroughfares, and is finding that delivery from the front by a service walk is as convenient as delivery by alley.

Public and semi-public buildings such as theater, school, library, Y. M. C. A., churches, etc., are centrally located.

Space is reserved for shops and stores near the center of the plot and at the corner nearest the city are reserved two business blocks for trade. As more area is needed for shops and stores the expansion should be restricted by ordinance to the border streets.

A strict housing policy has not been adopted. The apartment house is distinctly a growth of the American city and is peculiarly adapted to conditions in Chicago. It is good in idea and may be delightfully good in construction. The citizen of to-day is coming to live out-of-doors. The home is a place to come back to — not a place to stay cooped up in away from fresh air. For this reason the streets and park spaces are in a special degree a part of the housing scheme. Houses and apartments may be built sub-

ject to only the building-line restriction, 20 feet from the street line. Most of the building lots are 38 by 125 feet, and allow plenty of space for back-yard gardening and clothes drying. Since there are no alleys, all lot lines might be disregarded, and the residents of a block might combine in making the interior of the block one large park or playground.



PLAN BY ROBERT KINGERY

KEY TO PLAN

A. Stores and Shops.	C. Y. W. C. A. and Y. M. C. A.	E. Municipal Buildings.	O. Building Lots.
B. Churches.	D. Schools and Library.	F. Dwellings.	P. Parks.

For statistical data relating to this plan, see tables, pp. 134–137, Plan No. 6.

COMPETITIVE PLAN BY EDGAR H. LAWRENCE

W. B. GRIFFIN, ADVISORY

WITH the level land and other conditions so characteristic of the central western portion of the United States we can, in a typical community scheme, deal very generally with the structural elements of development.

The method of this project follows a primary distinction between suitable site requirements for individual or specialized *occupancy*, and those of social or general *communication*, in which twofold aspect the multifarious factors are analyzed before formulating into a synthetic design.

SYNOPSIS

1. OCCUPATION
1.1 INDUSTRIAL FUNCTIONS
1.11 As Part of Chicago
1.111 Focal Industries
1.112 Local Industries
1.11201 Location
1.11202 Area
1.11203 Unit Allotments
1.1121 Transfer Station
1.1122 Public Service Units
1.1123 Street Assemblage Units
1.1124 Retail Vending Units
1.1125 Trades Units
1.1126 Bulk Storage and Supply Units
1.12 As Integral Industrial Group (Alternative)
1.121 Manufacturing Site Plant
1.2 DOMESTIC FUNCTIONS
1.21 As Part of Chicago
1.22 As Integral Domestic Group
1.221 The Community Unit
1.222 Educational Units
1.223 Association Units
1.224 Dormitory Units
1.225 Neighborhood Units
1.226 Two-Family Units
1.227 Family Units
2. COMMUNICATION
2.1 EXTERNAL TRAFFIC
2.11 Boundary Highways
2.2 INTERNAL TRAFFIC
2.20 General
2.201 Nomenclature
2.202 Equipment
2.2021 Vehicle Pavements
2.2022 Pedestrian Pavements
2.2023 Parkings
2.2024 Trees and Shrubbery
2.2025 Illumination
2.2026 Conduits
2.21 Distribution
2.211 Segregation
2.212 Congregation
2.2121 Private
2.2122 Neighborhood
2.2123 School
2.2124 Associations
2.2125 Community

1. OCCUPATION.— The location at about eight miles southwest of the loop and an exclusively street car accessibility must, according to general tendency in similar portions of Chicago, imply for this site adaptation to a predominantly residential function. Since the site is flat and the problem an economic one, irregular curves and acute intersections may be entirely avoided.

1.1 INDUSTRIAL FUNCTIONS

1.11 As Part of Chicago.

1.111 Focal Industries.— Chicago is pre-eminently an industrial organism whose focal functions are connected in a gridiron system of main streets and avenues at half-mile intervals with occasional radial highways, all equipped with steam railroad, surface tram, or overhead rapid transit systems.

1.112 Local Industries.

1.11201 Location.— Local industrial functions are found generally distributed along these circulating avenues, and therefore on this typical tract will eventually be found along the greater part of the perimeter.

1.11202 Area.— By comparison on the basis of population the frontage of the perimeter is proved excessive for local industries so that only about five-eighths of that frontage is allotted to business.

1.11203 Unit Allotment.— These lots are all rectangular with alley shipping frontages as well as street store frontage free from alley crossings, and of 100 feet depth.

1.1121 TRANSFER STATION.— Since the points of greatest traffic will be the most accessible and valuable sites, the most general local industries will naturally start at the existent transfer corner in a special arcade court structure that will be dignified and important as a keynote. Built full to the street line, with three arcaded sheltered approaches and a fountained courtyard, there is accorded a window frontage of 1480 lineal feet for the small popular stores. A two story office tower corner feature may effect a befitting terminal for each long-internal avenue, while a roof garden café can have an attractive outlook toward the central community group.

1.1122 PUBLIC SERVICE UNITS.— These should have subordinate preference as terminal gateway features to the shorter avenues, and include postal, police, and fire stations, ward office, water, gas, and electric offices, bank and rental offices.

1.1123 STREET ASSEMBLAGE UNITS.— Corner allotment must for safety be given to popular amusement establishments.

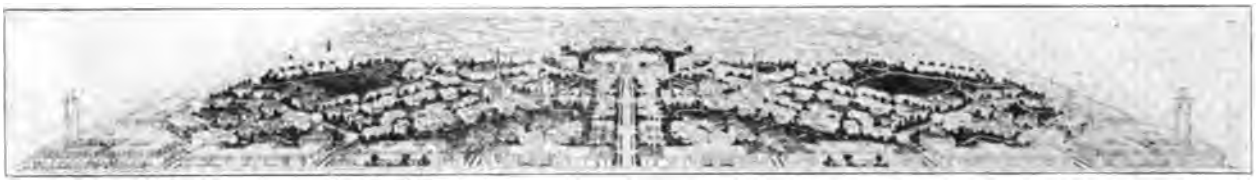
1.1124 RETAIL VENDING UNITS.— Following in order of importance contiguous to the most valuable corners are the retail stores, wherein vending alone is carried on, comprising display and sales spaces for groceries, drugs, confections, cigars, liquors, dry goods, furniture, and furnishings.

1.1125 TRADES UNITS.— A different class of industries naturally to be set next, and of less continuous demand, are the trade shops, permissible only in single-story structures on account of light requirements, fire risk, and noise. These are the bakeries, restaurants, barber shops, millinery shops, laundries, paint, plumbing, and carpenter shops, photograph studios, and garage.

1.1126 BULK STORAGE AND SUPPLY UNITS.— On the least valuable circulation avenue are placed the larger industrial units of wood-yard, fuel and building material supply depots, and possibly a community heating plant.

1.12 AS AN INTEGRAL INDUSTRIAL GROUP.

1.121 MANUFACTURING SITE PLANT.— To suggest the adaptability of a quarter-section development in connection with its own manufacturing industry, assume the triangular quadrant of 40 acres lying along a steam railway frontage on the west side of the tract. The accessibility of switch tracks is evident, and with buildings disposed along the community frontage, the railway operations would be faced off.



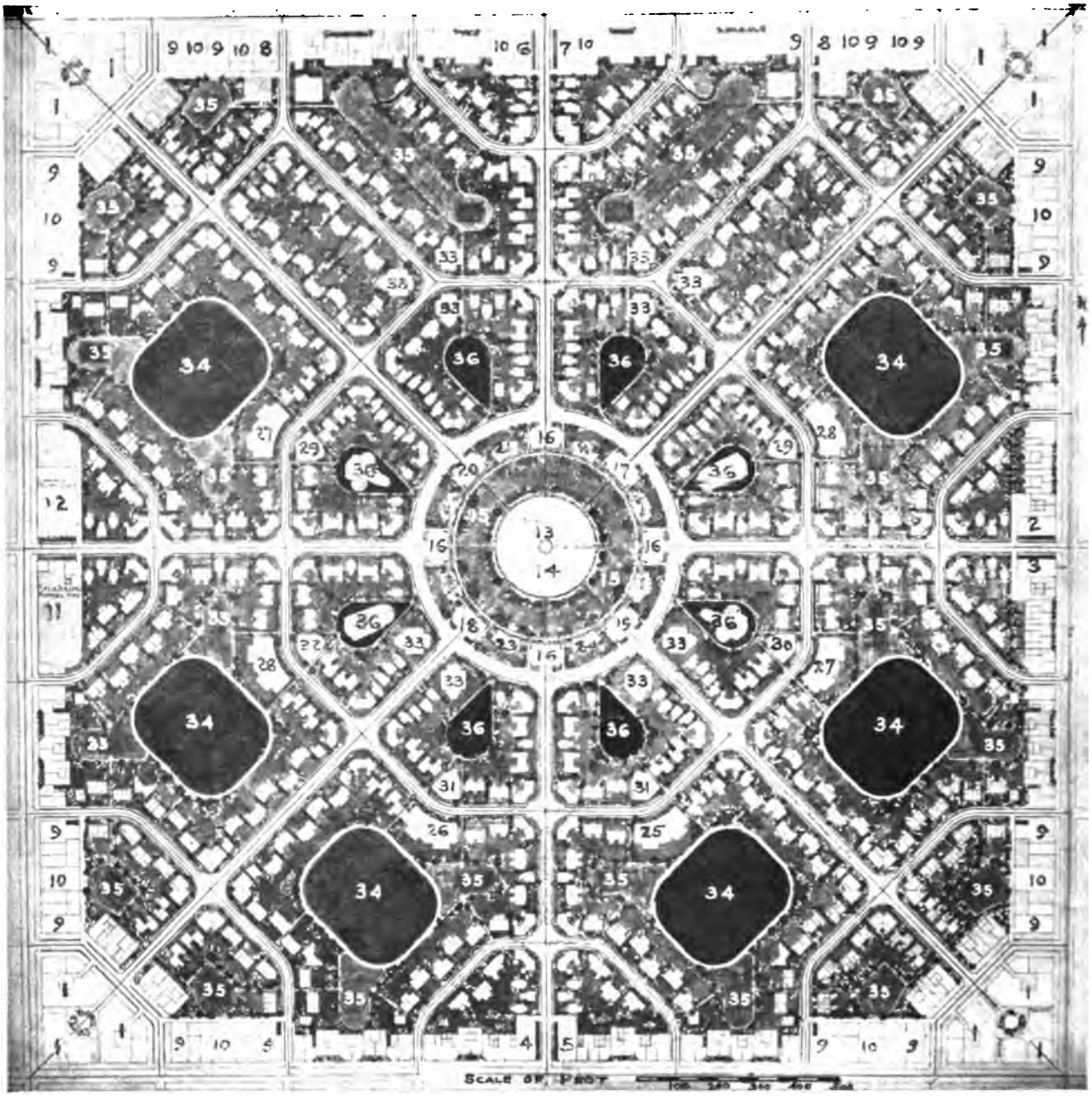
BIRD'S-EYE VIEW OF QUARTER-SECTION

1.2 DOMESTIC FUNCTIONS.

1.21 AS PART OF CHICAGO.— Considered thus it seems advisable to develop independent communities within the limit of local acquaintanceship, apart from the external disturbing influences.

1.22 AS INTEGRAL DOMESTIC GROUP.— As the internal attractions will have to compete with those of the external city, they must be so organized as to raise the popular standards and minimize the evil influences found among a multitude of time-killing pursuits.

1.221 THE COMMUNITY UNIT.— In the center of the tract, its most accessible point, is provided a community group, consisting of the common with music pavilion set in a reflecting basin with bordering aquatic gardens, tree-shaded promenade, and public gardens setting off refectory, assembly buildings, library, and amphitheater, and a colonnade connecting four eight-room public schools eventually necessary.



PLAN BY EDGAR H. LAWRENCE. WALTER B. GRIFFIN, ADVISORY

KEY TO PLAN

INDUSTRIAL FUNCTIONS.
Transfer Station.
1. Store Arcade Structure.
Public Service Units.
2. Post Office.
3. Police and Fire Station.
4. Ward Office.
5. Gas, Water, and Electric Office.
6. Bank.
7. Rental Office.
Street Assemblage Units.
8. Theaters.
Retail Vending Units.
1. Store Arcade Structure.
9. Retail Stores.
Trade Units.
10. Trade Shops.
Bulk Storage.
11. Fuel and Building Supply Depot.
12. Community Heating Plant.
DOMESTIC FUNCTIONS.
Community Units.
Educational Units.
13. Music Pavilion.
14. Water Basin.
15. Public Gardens.
16. Schools.
17. Assembly.
18. Library.
19. Gymnasium.
20. Natatorium.
21. Exhibits Building.
22. Kindergarten.
23. Refectory.
24. Training School.
Association Units.
Dormitory Units.
25. Y. M. C. A.
26. Y. W. C. A.
27. Neighborhood House.
28. Inn.
29. Billiard Hall.
30. Union Headquarters.
31. Lodge Hall.
32. Café.
33. Churches.
Neighborhood Units.
34. Play Fields.
35. Play Courts.
36. Gymnasium Courts.
Two Family Units.
184 Houses.
Family Units.
860 Houses.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 7.

1.222 EDUCATIONAL UNITS.— The four schoolhouses are placed at one community center for economy of administration, within range of a quarter-mile of separate continuous children's playgrounds radially disposed. Schoolrooms are preferably set with the cardinal points of the compass.

1.223 ASSOCIATION UNITS.— On the octagonal circuitway are eighteen street terminal sites suitable for important structures for local social groups such as union headquarters, lodges, turner societies, social clubs, residential inns, billiard halls, and religious associations, all placed contiguous to playfields or garden frontage. Church edifices in appropriate grouping can command quiet internal vistas.

1.224 DORMITORY UNITS.— Closely allied to, and often combined with, the associations are the various residential organizations and other home provisions for independent individual residents.

1.225 NEIGHBORHOOD UNITS.— The outdoor neighborhood features are here substituted for the street areas of the built-up city or the isolated playgrounds of the slum districts. The advantages of parental oversight by reason of contiguity to the home are thus secured. Variety is afforded by garden accommodation to some, modest play courts to others, children's playgrounds with apparatus or water facilities, and to many, ample fields for each sport in season, including football, baseball, basket-ball, lacrosse, handball, tennis, croquet, cricket, and banked running-track to be flooded for winter skating rink.

1.226 TWO-FAMILY UNITS.— The two-family house has become established in our developing Chicago residence districts to such an extent that we are not warranted in ignoring it. The proportion of these units is entirely flexible in this scheme, in which about 18% has been introduced. These are placed on lots of most accessibility to transportation line and on street corners, utilizing the lots with smallest back yards.

1.227 FAMILY UNITS.— It is to be hoped that the individual house and grounds will long be the dominant features of our cities.

An allotment of 30 feet will allow a house of two good rooms in width, with entrances at the center of one side, leaving street and garden frontage free for outlook, and when staggered, a vista from the two sides also. Verandas are thus free in the rear where house fronts are maximum distances apart and free from intrusion. These lots are 100 feet deep, with additional backset of 15 feet belonging to the city, but planted and maintained as an individual holding, and securing a spacing of 60 feet between building lines.

Gardening is not a universal avocation here as in England, so that less private yard recreation space is to be provided. Hedges and irregular shrubbery constitute the better means of separating and beautifying the neighborhood lawns in one harmonious parklike ensemble.

For sunlight in all rooms each day an arrangement of houses with the diagonal points of the compass is most important in our climate; seventy per cent are here so placed.

Inside the house, the concentration of entrances and stairways utilizes the space least useful for occupancy. Here a back alley approach becomes unnecessary and rear outbuildings functionless.

2. COMMUNICATION.— This phase considers the means of connecting the specialized sites with the general facilities for transportation, being tributary to the existing surrounding system, yet discriminating as to the kinds and quantity of service desired.

2.1 EXTERNAL TRAFFIC.

2.11 BOUNDARY HIGHWAYS.— The prevailing boundary highways of 66 feet width are here maintained, also the continuity of the abutting streets, to avoid confusion. It is inevitable that there will be some distinction in importance between the existing street car lines, determining the most valuable part of the tract, in which the development will begin, and from which it can progress normally without intervening vacant spaces, as is apparent from the geometric plan.

2.2 INTERNAL TRAFFIC.

2.20 GENERAL.— A minimum width of 60 feet is here fixed between frontages on communication ways serving as access to buildings, giving a suitable backset from actual public ways, whose widths are determined by their transit needs as inferred from their length, character of occupancy, and tributary feeders.

2.201 NOMENCLATURE.— A simple system of nomenclature is important, and is possible here.

2.202 EQUIPMENT.

2.2021 VEHICLE PAVEMENTS.— These are to be considered of ample width at 25 feet in the more important ways, and at 18 feet in the lesser ways, being sufficient for a vehicle to pass one backed against the edge.

2.2022 PEDESTRIAN PAVEMENTS.— Sidewalk pavements are 4 feet for purely residential routes allowing promenade two abreast. In the primary routes 6 feet width is conceded. The pathways of the playgrounds are 4 feet wide, a minimum amongst shrubbery.

2.2023 PARKINGS.— A parking of but 2 feet width will permit planting of evergreen creepers for easy maintenance, and can be omitted entirely at road intersections where additional vehicle width is welcome.

2.2024 TREES AND SHRUBBERY.— Residential ways are both natural and dignified, being short, straight avenues lined with different species of trees and massed shrubbery, all confined to the abutting allotments.

2.2025 ILLUMINATION.— Illumination of narrow ways can be sufficiently diffused from relatively low standards, possible of execution as ornamental concrete lanterns.

2.2026 CONDUITS.— A public service conduit in each trafficway is here contemplated, to be built of concrete in the trench excavated for sewer, furnished with stubs and manholes, and equipped with all public service mains.

2.21 DISTRIBUTION.— The functions of internal lines are to reach the homes quickly and to meet the needs of distribution and collection to and from these homes. Study of this project shows it to be continuous for such service, without being attractive to thoroughfare usage.

2.211 SEGREGATION.— It is important to arrange internal lines to seclude the domestic community from industrial circulation. No streets are therefore allowed to pass through without diversion.

2.212 CONGREGATION.— This function is for periodic domestic social amenities, in contradistinction to the streets of a general city which are for concentrating and circulating traffic in large numbers and drawing trade. Filtered through the segregating system, cut off from through traffic, this function is only periodically operative, as for the children at certain times of the day and for the adults at evening.

2.2121 PRIVATE CONGREGATION.— This reassembling of the individuals first takes place within the buildings in the family and club and inn groups.

2.2122 NEIGHBORHOOD CONGREGATION.— The garden fronted park, play fields, play courts, and gymnasium courts of various sorts are supplemented by an informal winding scheme of paths with irregular shrub and tree plantations, forming a circulating pedestrian parkway suitable for children and for infants' go-carts.

2.2123 SCHOOL CONGREGATION.— The advantageous location of the schools at the internal ends of the bisecting centerways makes the shortest possible distances between home and school, which are thus not more than two blocks apart.

2.2124 ASSOCIATIONS CONGREGATION.— In general these features are cross linked for interfellowship by the octagonal circuitway with two objectives terminating a vista at each turn.

2.2125 COMMUNITY CONGREGATION.— The location of this function in the geometric center is established for reasons of accessibility, isolation from external influences, and to emphasize its importance to the city as the unified social expression of a 6400 community.

The central functions are joined together by a protected passageway as a promenade for students and visitors, overlooking the public gardens setting off the pool with its central feature of an open pagoda designed as a music pavilion.

COMPETITIVE PLAN BY MARCIA MEAD

THE site for this scheme of development chosen in the northwest quadrant of the city is designed with reference to a diagonal axis through the intersection of the main street car lines running to the loop district in the heart of the city.

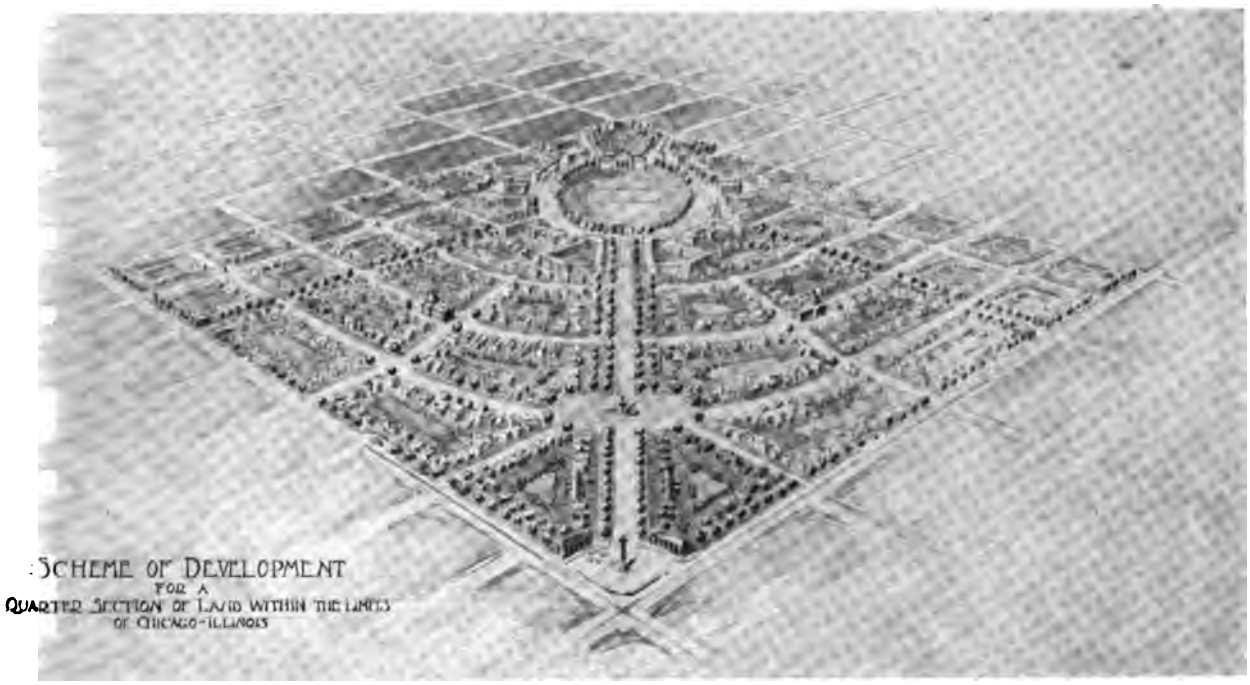
The aim of this scheme is to house a number of people of somewhat varied circumstances in such a way as to promote a unity of general interest.

The nucleus of the design is a large central plaza around which are grouped the schools, fire-engine houses, and other semi-public buildings, and from which the streets radiate in different directions.

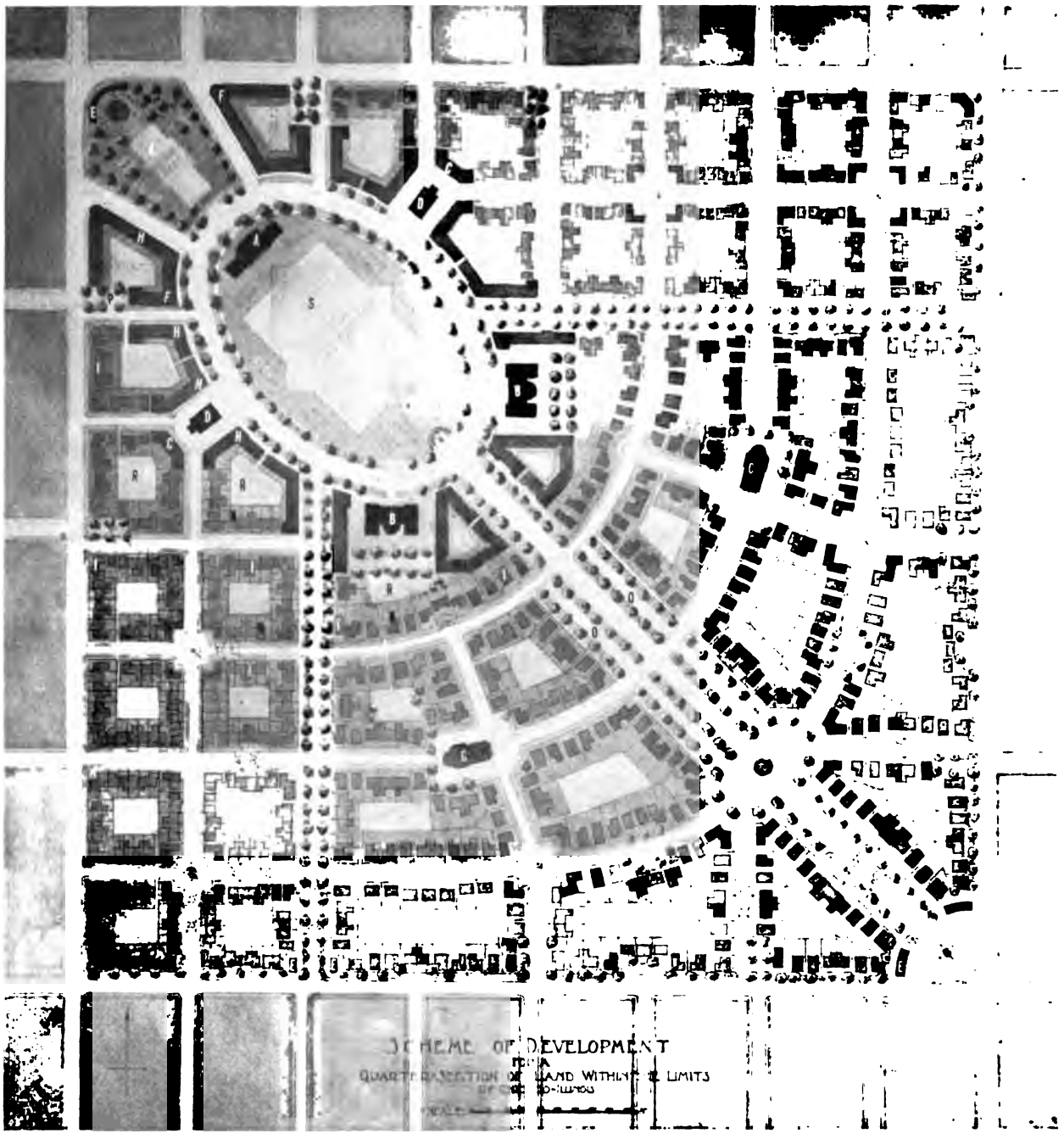
The social building containing amusement hall, library, clubrooms, gymnasium, swimming pool, shower baths, etc., is located at one end of the plaza overlooking the field for athletic sports or outdoor entertainments.

Behind the social building will be found the playgrounds, which are provided with swings, teeters, wading pool, sand piles, various apparatus for gymnasium work, and ample space for games. In addition to this, each group of houses has its common play space, thus providing for an abundance of outdoor life and recreation.

The intervening spaces about the main plaza between the public buildings are occupied by two or three story tenements, thus furnishing residence for groups of people not desiring single houses and lots. The stores are grouped in the northwest section on either side of the playgrounds, shielding the residence sections from the noise of the games. Assuming that many of the larger industrial plants are located in the outlying districts in this direction, the people occupying the site are thus afforded opportunity to purchase supplies on the way to and from their work.



BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY MARCIA MEAD

KEY TO PLAN

A. Social Hall.	E. Pavilions.	I. Houses.	P. Parks.
B. Schoolhouses.	F. Stores.	L. Playgrounds.	R. Play Space or Gardens.
C. Churches.	G. Hotels.	N. Building Lots.	S. Athletic Field or Plaza.
D. Fire-Engine Houses.	H. Apartments.	O. Promenade.	

For statistical data relating to this plan see tables pp. 134–137, Plan No. 19.

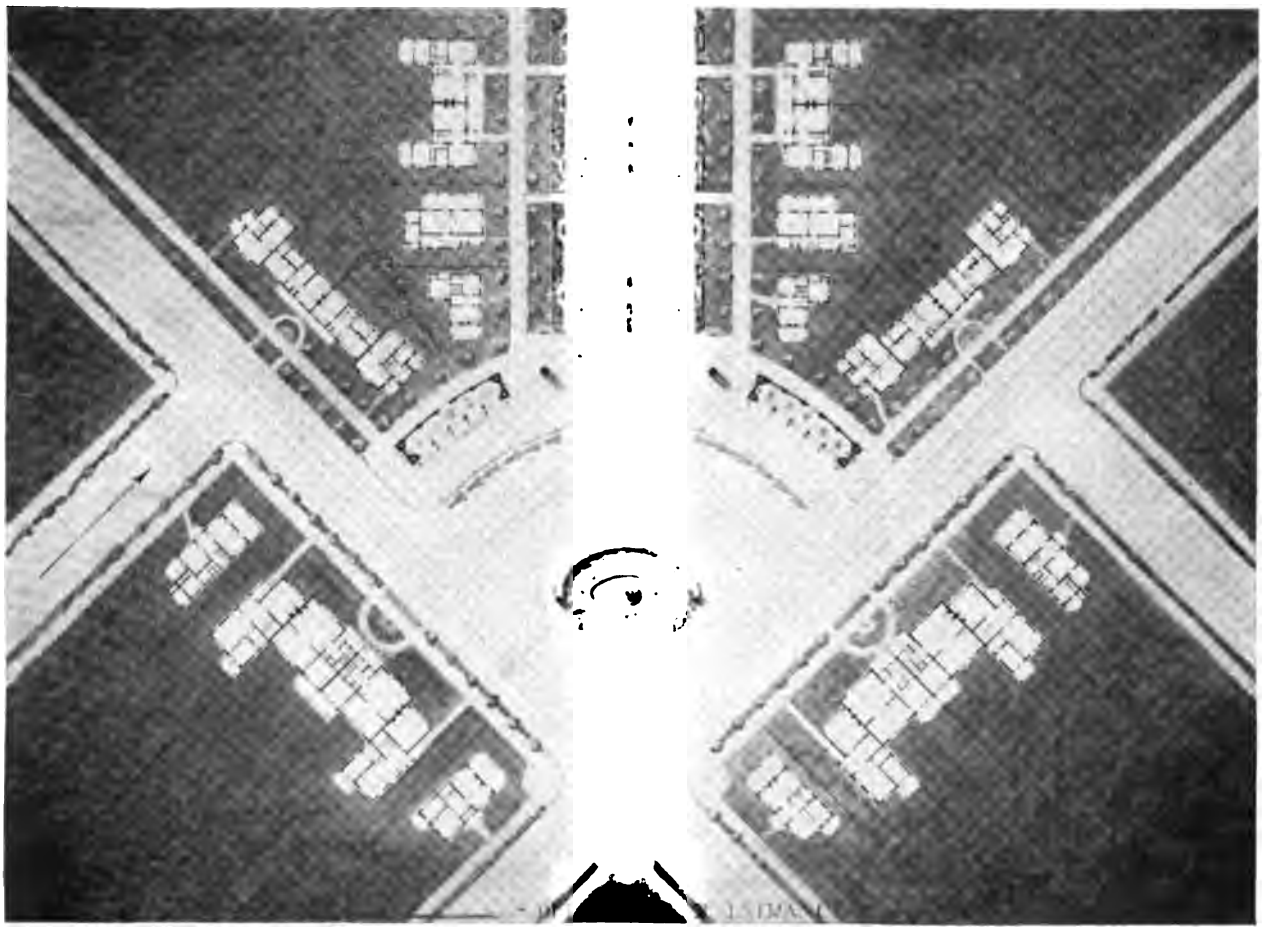
The streets are carefully planned so as to secure pleasing vistas in every direction and their width is determined by their relative use and importance. Lines of traffic are kept as narrow as practicable, varying rather the width of the grass plots where a more open effect is desired.

Leading up to the plaza and terminated by a statue and exedra is the promenade flanked by trees and parks on either side. The vista is interrupted by an open square surrounded by trees, forming an admirable setting for a sculptural group or fountain.

The entrance to the community is at the junction of the car lines and is emphasized by an open space with attractive pavilions on either side. (See detail plan of the entrance to the development.) Other pavilions are designed at the terminations of the other two important streets.

To further secure the unity of the design, the axes of some of the streets connecting with the outside area are placed to one side, breaking the vista by a group of trees while not seriously interfering with the traffic.

To accommodate people of different circumstances, the northern and western portions are divided into small lots and groups of houses, while the southeastern portion is divided into larger lots where single houses may be built. This arrangement accommodates different classes of people and at the same time forms minor social groups of common interest.



DETAIL PLAN OF ENTRANCE

COMPETITIVE PLAN BY MORELL & NICHOLS

OUR endeavor has been to plan a section where not only workmen living near the manufacturing district could find sanitary modern housing conditions among attractive surroundings, but also where the more prosperous would feel inclined to build their homes. The entire scheme was studied out more or less in conformity with the new civic plans for Chicago, and the main feature of the plan was determined on the general principles governing this civic plan.

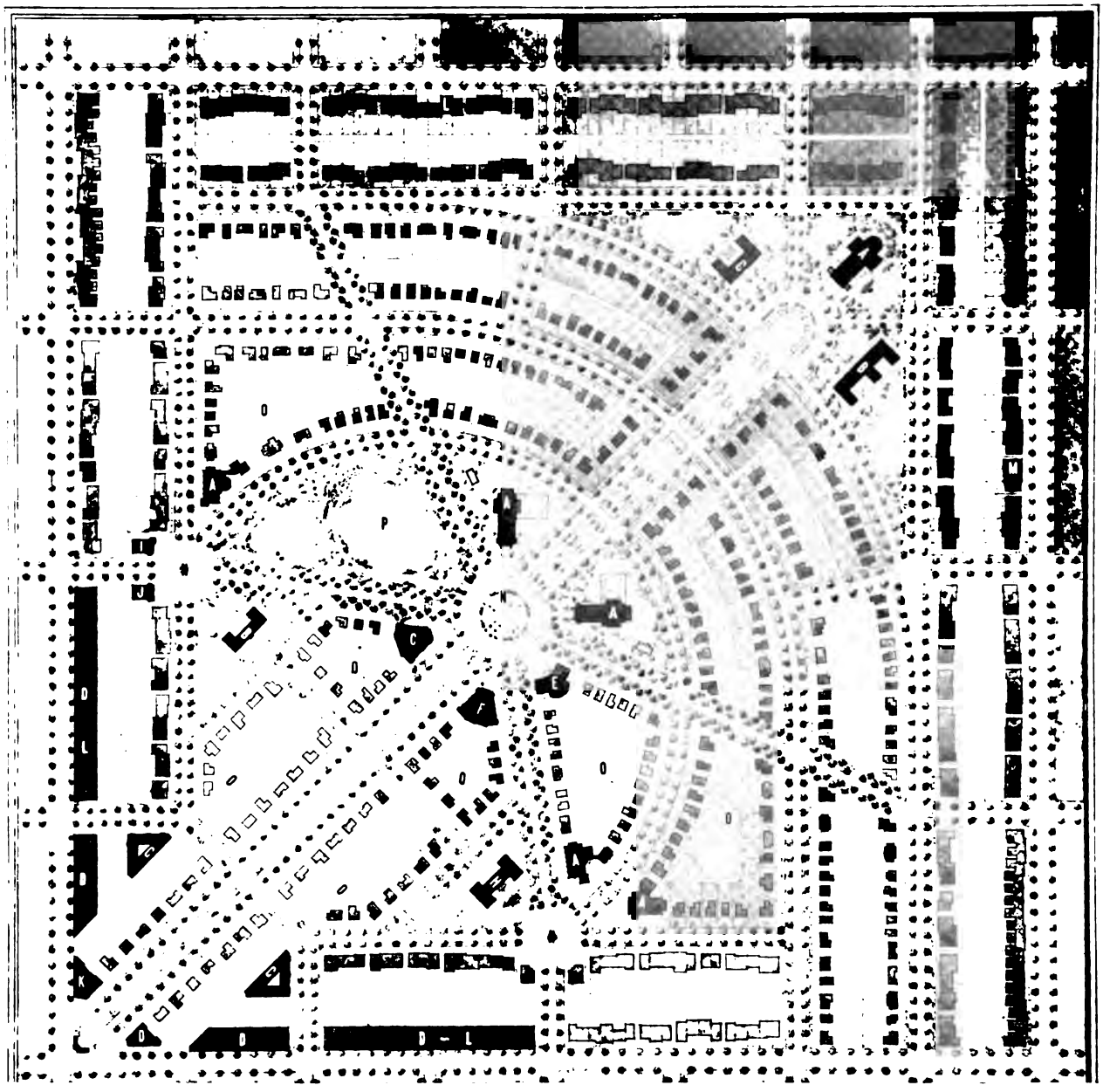
The plan aims to arrange the streets in such a way as will afford free traffic circulation throughout the development and feasible connections with the surrounding established streets. Attention has been directed towards such an arrangement of streets as would lead traffic to the important foci, would avoid the monotony of the gridiron system, and would provide variety in the setting of the public and private buildings. The width of the streets varies in the scheme in accordance with the importance of certain streets to the traffic. The cost of construction and maintenance of streets would not be much less than if the development was a regular gridiron system, largely on account of the cost of the wide main parkway. However, such an imposing parkway with double roadway and a center parking space would be a strong attraction to the subdivision and well worth its cost.

The less expensive workmen's houses and the business and amusement houses, together with the apartments, were located along streets having or to have street car traffic. The attached type of building for this class would be most desirable from both economic and esthetic points of view. Towards the central point larger building sites are shown on which detached homes could be built. In addition to generous building sites, space was

BIRD'S-EYE VIEW OF THE QUARTER-SECTION

also provided for attractive, cheerful surroundings, for small garden tracts, open play courts, and free breathing spots and playgrounds other than the public streets. The public building sites are located at the most conspicuous points, where the buildings would receive sufficient space for the needed setting and where their attractive architectural features would add general interest to the section.

In providing sites for the public buildings the educational, recreational, religious, social, and administrative needs of the community were considered and ample provision was made for them.



PLAN BY MORELL AND NICHOLS

KEY TO PLAN

A. Church.	E. Library.	I. Fire Station.	M. Dwelling Houses.
B. School.	F. Administrative.	J. Police Station.	N. Public Square.
C. Social Hall or Club.	G. Market.	K. Hotel.	O. Play Court.
D. Store.	H. Hospital.	L. Apartments.	P. Park.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 15.

COMPETITIVE PLAN BY ROBERT A. POPE

THE great cost of city development to-day is due to the excessive amount of land in streets, and the resultant large charge which their improvement and maintenance permanently involves. This has been brought about by the engineers, who have accepted the established precedent of the small uniform city block and city lot as essential to the best interests of the city. Further, they have assumed that all streets should be through streets and traffic streets, whether the area affected is residential or not.

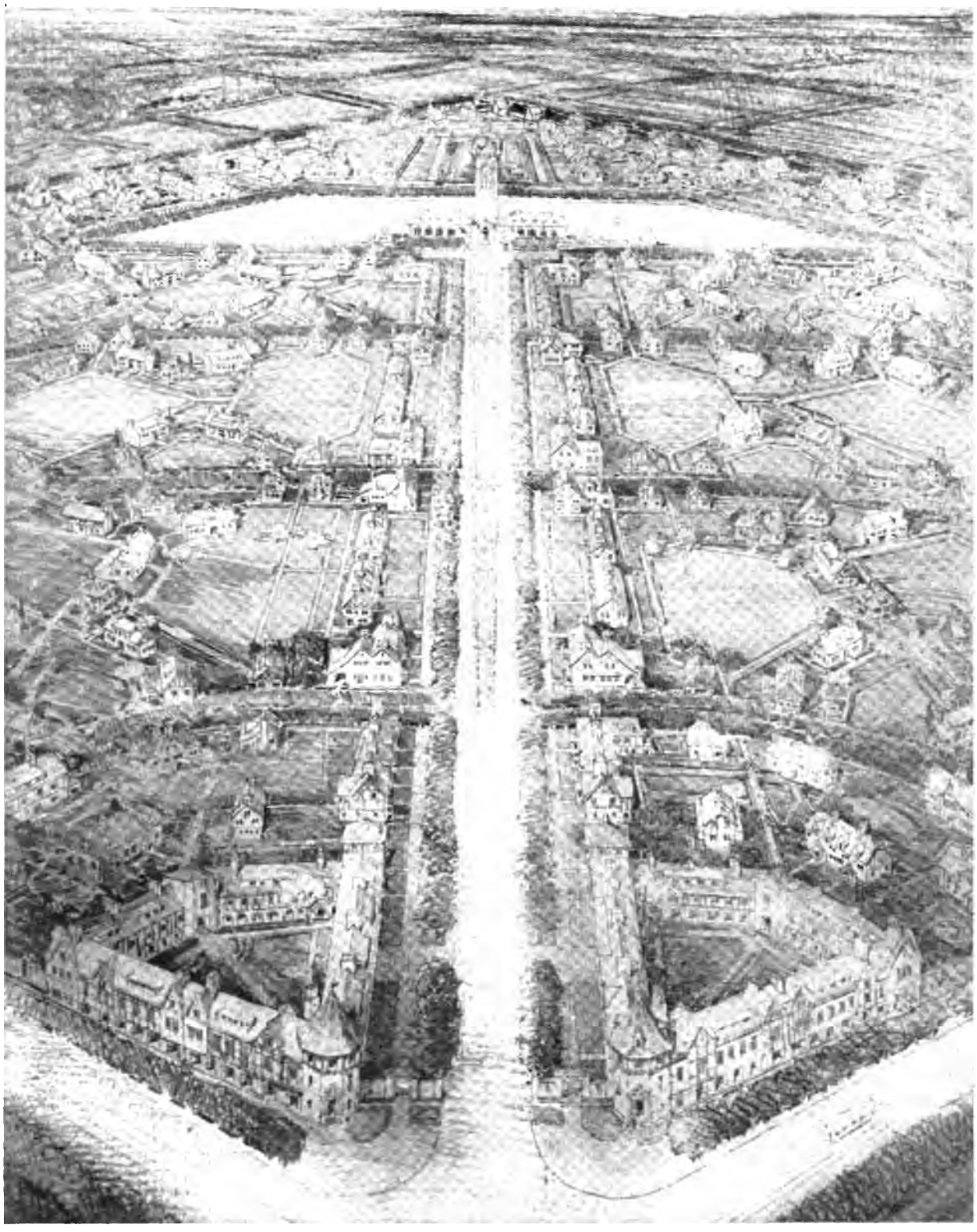
In submitting this design, the convenience of the engineer has been taken into account only as a minor consideration, a procedure quite contrary to the one in vogue among the street layout departments of our large cities.

The design submitted has a street area of 91,904 square yards which, when compared with the abutting Chicago plan for the same area, shows a percentage of 19 per cent in its favor. Translated into cost of development this means a saving of $6,017.72 over the typical Chicago plan.

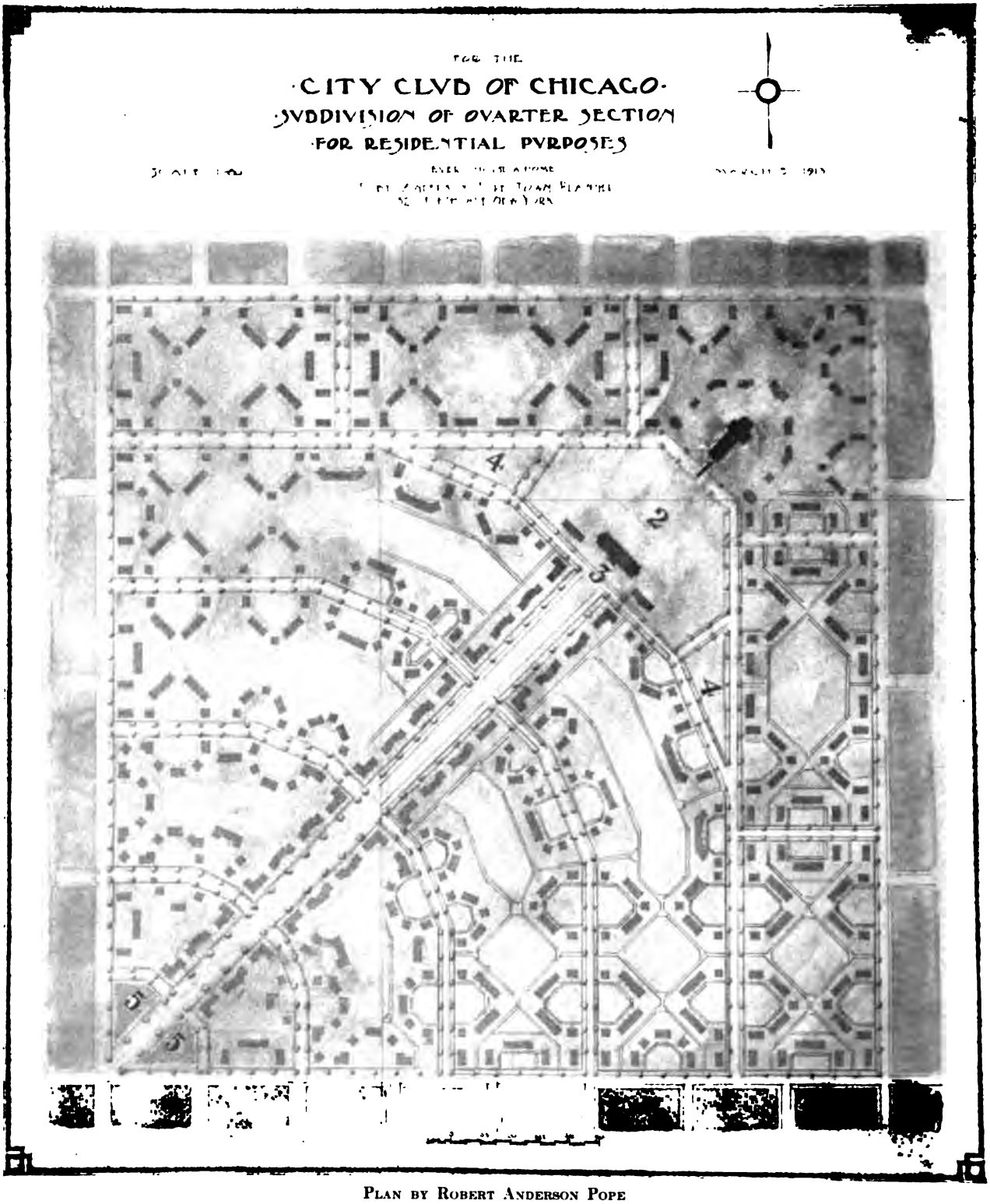
This minimizing of street area has been accomplished by assuming as true two unprecedented hypotheses: first, the streets within the quarter-section should not have to accommodate more than a small percentage above the traffic loads of its own community, instead of having all residential streets through thoroughfares, as is largely done in Chicago

A GROUP OF HOUSES AT FOREST HILLS, MASSACHUSETTS

A suburb of Boston planned by the author, showing the houses facing an open park on a principle similar to that embodied in the Chicago quarter-section plan.



BIRD'S-EYE VIEW OF PART OF THE QUARTER-SECTION



PLAN BY ROBERT ANDERSON POPE

KEY TO PLAN

1. Church. 2. Athletic Field. 3. Gymnasium. 4. School Sites. 5. Stores.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 20.

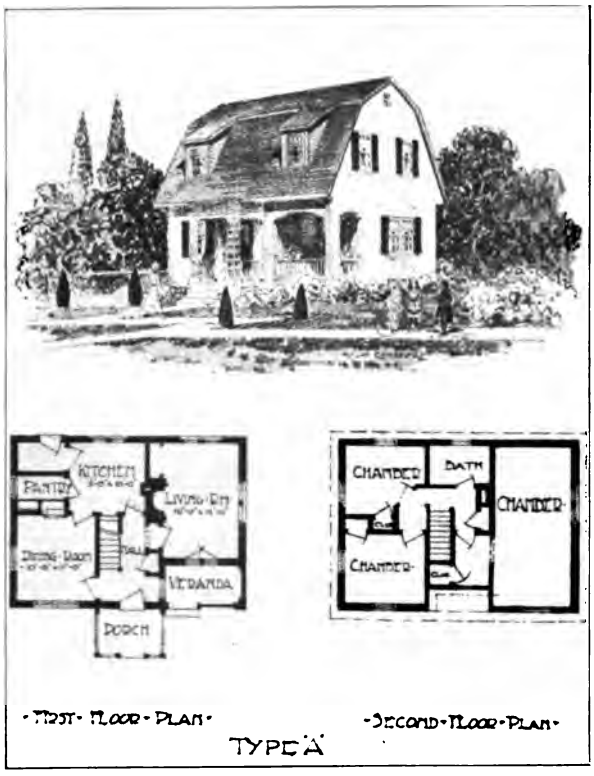
and most of our large cities; second, better homes can be had without too much actual street frontage if service can be provided in the rears of houses, with walks from the main highway in front.

These two hypotheses make possible the saving of $6,017.17 over the present type of plan, besides making an additional saving in the amount of lineal feet of road in development. A much larger saving could be made were it not for the excessive unit cost at which the service road has been figured. This economy of land makes possible an extraordinary amount of park and playground space. In regard to limiting the traffic, we have brought the thoroughfares of this quarter-section into some relation with the adjoining roads, but purposely have linked them up as little as seemed desirable, in order to prevent through vehicular traffic. The pedestrian traffic, however, especially to the car lines, has been greatly facilitated by the use of walks across the blocks, and through the parks and playgrounds, accomplishing at the same time an economy in land, road, and development cost.

A minor economy resulting from these hypotheses is found in the reduced number of street trees necessary to purchase and maintain.

Vehicular as well as pedestrian access to the car lines has been made as direct as possible. The breaks in the thoroughfares leading up to the car lines are made to give a little more picturesque impression by emphasizing the importance of the central promenade, along which, on Sundays and holidays, most of the people in the community would find it attractive to walk.

REAR VIEW OF A GROUP OF HOUSES AT FOREST HILLS, MASSACHUSETTS
Showing the open area available as a playground



The longest walk to the car line would be about ten minutes. The average walk would be nearer four minutes.

City dwellers cannot hope for escape from the monotony of the typical city plan, unless it be provided for them in the residential area in which they live. Because of this, it is all the more imperative that the residential districts which we are to add to our cities be freed from this monotony by their development in a picturesque manner. It is partly, then, for this reason that we have used the groups of houses around parks. We have varied these groups as to the types of houses, and the shapes and sizes of playgrounds. The park and playground border planting would diversify these groups still further.

The design of the boulevard leading up to the gymnasium and playfield furnishes another departure from the usual city plan. This will be stately rather than picturesque, and will therefore result in another psychological impression in the minds of the dwellers in this community. The great playfield gives an effect of expanse and of freedom not to be found within the ordinary city development scheme. The tower of the gymnasium is on the axis of five different streets.

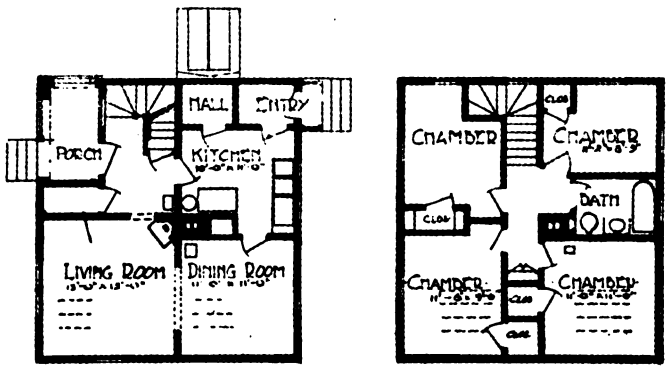
In the matter of the social life of the community, it is contended that it is quite as feasible to predetermine the social life of the community by means of a scientific design as it is to determine the direction which pedestrian and vehicular traffic will take when streets and walks are laid down in given places.

The ideal number of families in a group varies with the type of population to be served, and the location of the population. We believe, however, that it can be scientifically determined what is the best number of families to embrace in one group for a given type of land. We have assumed in our design that from six to ten family units form a desirable group.

We believe the gathering of these families around open parks, and abutting on adjoining playgrounds, will be material factors in establishing that mutual aid which Prince Kropotkin says is one of the greatest uplifting influences in urban life. The relation of the houses in surrounding the playgrounds, which in turn are to be well hedged in, makes it possible for the housewife, working in the kitchen, to observe the small child at its play, a relief and in many cases an immeasurable economy in the nervous energy of the mother.

The location of a church, two large schoolhouses, and a great gymnasium in one group and in a well-defined center, adjacent to the large public park or parade ground, tends to bind the community as a whole together with these numerous types of social

activities. Such buildings will furnish places for lectures, for the drama, and for gymnastics, drilling and indoor games, while the great playfields will provide for football, baseball, hockey, drilling, track athletics, and public gatherings. The location for the school houses has been chosen adjoining the playfield, so as to give the maximum use and advantage of this open space to the children before, during, and after school hours.



FIRST-FLOOR-PLAN. SECOND-FLOOR-PLAN.

TYPE 'D

The minimum amount of land needed for household uses and for front gardens has been assigned to each house. The reason for this is that the burden of maintenance or purchase, either outright, by lease, or through the co-partnership plan, must be reduced to a minimum, and therefore we have given to most of the houses only enough ground for the service arrangements, clothes drying, etc., in the rear, and for a small garden, such as is found in England, in the front. This will provide as much land as the prospective tenant will have either ability or inclination to maintain.

The park and playground area must be maintained by the community so as to be kept uniform. This can be done at a relatively small cost in view of the large amount of land to be taken care of at the same time under one organization.

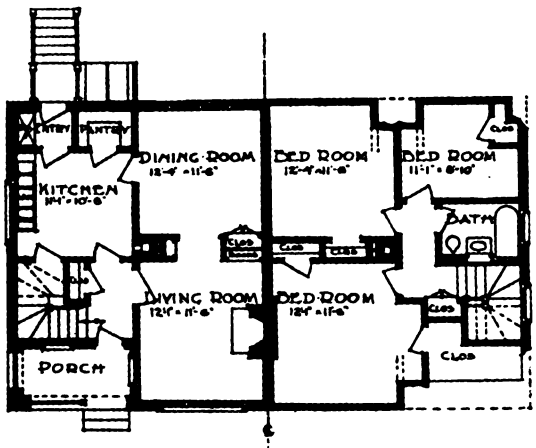
From within, the houses have been so arranged as to secure broad and long outlooks over park and playgrounds, and it can be said of this plan that *every family has a park in front of its house, and a playground in the rear.* (See illustrations, pp. 66 and 69). The outlooks from the houses are nearly all through views, because the houses have been arranged so that they look by, rather than into each other. These through views are very long, far longer than they ever are or could be in the typical city layout.

A point might be made that the playgrounds would harbor noise and mischief, but this is simply a matter of limiting the use of them to children of a certain age, at certain hours, and preferably under tutelage. They are primarily intended for the smaller children. The older boys could play their games in the large park under observation of a

welfare worker or the police. We have arbitrarily assumed a one-family house unit to be 25 x 26 feet, which makes possible any one of the accompanying types, A, B, or C.

In each instance the family house unit dimensions are 25 x 26. In each case the dining-room, living-room, hall, and kitchen are provided on the first floor, with bath and three or four bedrooms upstairs. Any long party wall houses are so oriented as to have no north bedrooms.

Whereas these houses cost from $2,200 to $3,000, they are semi-fireproof, and could probably be reduced in cost to from $1,700 to $2,600. Here again, however, the actual house unit that would be best for the purposes of this community can only be actually determined by a housing survey of some similar, but built-up, area. This survey should give us an idea of the average amounts available for rentals, and we must then design our houses and our land development so that the charges for rent, or sales, shall not ex- the amount of money available for renting or purchase purposes among this class of population.



HALF FIRST FLOOR PLAN HALF SECOND FLOOR PLAN
TYPE C

COMPETITIVE PLAN BY CHARLES H. RAMSDELL

THE accompanying plan makes possible a reduction in street length of the gridiron system of 4100 feet, or about 19 per cent. This means a radical reduction of all street utilities, the pavements, the sidewalks, the street tree-planting, the length of sewer, gas, and water mains. There would be possible a radical change of character of these utilities. There are more short streets and side streets in this plan than on the gridiron platting. This would reduce pavement widths, size and depths of sewers, water and gas mains. There would be a reduction of sidewalk area because of the parked areas.

At the same time only two abutting streets are blocked by the new plat. Otherwise, every street co-ordinates with those of the adjoining plats. This means a decided economy of distance in turning the necessary corners and jogs of streets where one would meet an offset of line. An added saving of distance would be found in the diagonal direction of the streets as shown on this plan. One could diagonally cross the entire tract as well as cross it directly north and south, east and west.

The separation of the different classes of houses, stores, semi-public and public buildings, would make possible the complete and solid building of the whole tract without the disagreeable feature of undesirable neighboring property.

It is intended that the social activities of the suburb would be cared for in the Social Center building on the Common. This building would hold all public meetings and be headquarters for clubs, gymnasium classes, etc. On the other end of the common would be placed the largest school — of imposing size and character — to terminate the most attractive street vistas to it. The church locations would be for sale subject to restriction as to use, but the common ought to be held for all the residents of the suburb. Three classes of playgrounds are provided, one for school children, one for classes out of school hours and during the vacations, and lastly, a field playground for the larger sports — baseball, football, field games, etc.

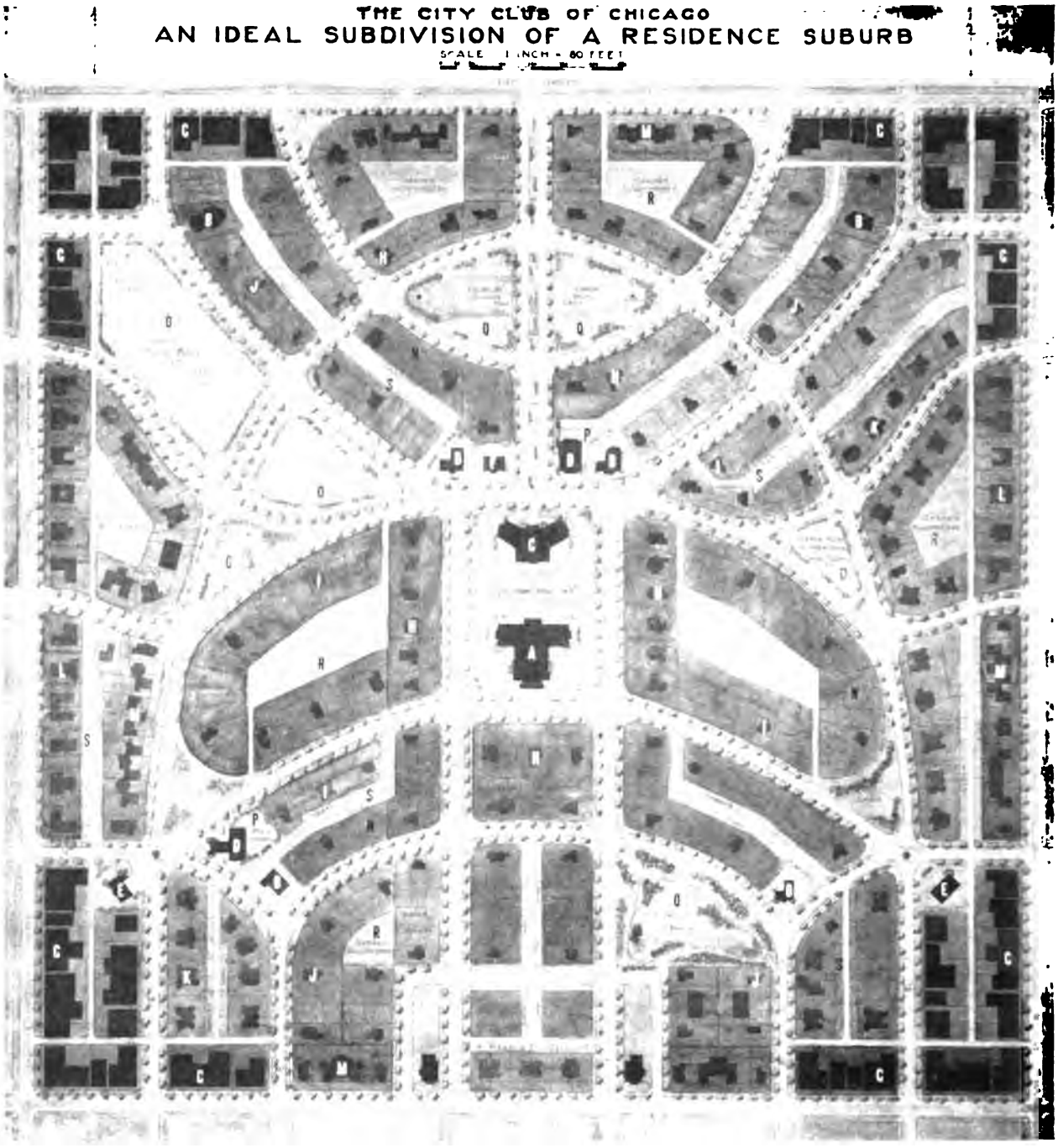
Small neighborhood parks would prove valuable breathing spots and quiet recreation grounds for the residents. They would be city park squares rather than parks of the naturalesque type. The popular love of flowers and gardens could be provided for in some of the small parks shown.

The street system as laid out is intended to provide its own interesting vistas and attractive views. The curvilinear system is adopted to give the attractive winding roadways. Certain streets are straight and wide enough to give imposing perspective views while others are of considerable length to provide interesting circuit drives.

The homes of similar character would be grouped; the larger set well back from the street, the smaller nearer the street. The demand for small lots would be met by a combination of 25-foot group houses and lots, but *single* houses have each a 50-foot lot at least.

Interesting treatment along the alleys would be possible by locating gardens along their length. Then, too, consistent street treatment in the way of planting of trees and shrubbery, hedges, or walls would be most attractive along the winding streets.

As a whole, this plan was worked up not as a solution for the problem of housing the dense populations of Europe or the East, but rather for the more open suburb of the West, where land is not sold by the square foot.



PLAN BY CHARLES H. RAMSDELL

KEY TO PLAN

A. Civic Center Building.
B. Churches.
C. High School.
D. Primary and Grade Schools.
E. Fire and Police Stations.
F. Library.
G. Stores and Office Buildings.
H. Large Residences.
I. Medium Sized Homes.
J. Small Homes.
K. Two-Family Houses.
L. Apartment Buildings.
M. Twenty-five-foot Group Houses.
N. Building Lots.
O. Public Playgrounds.
P. School Playgrounds.
Q. Parks and City Squares.
R. Allotment Gardens.
S. Gardens along Alley Lines.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 16.

COMPETITIVE PLAN BY RIDDLE AND RIDDLE

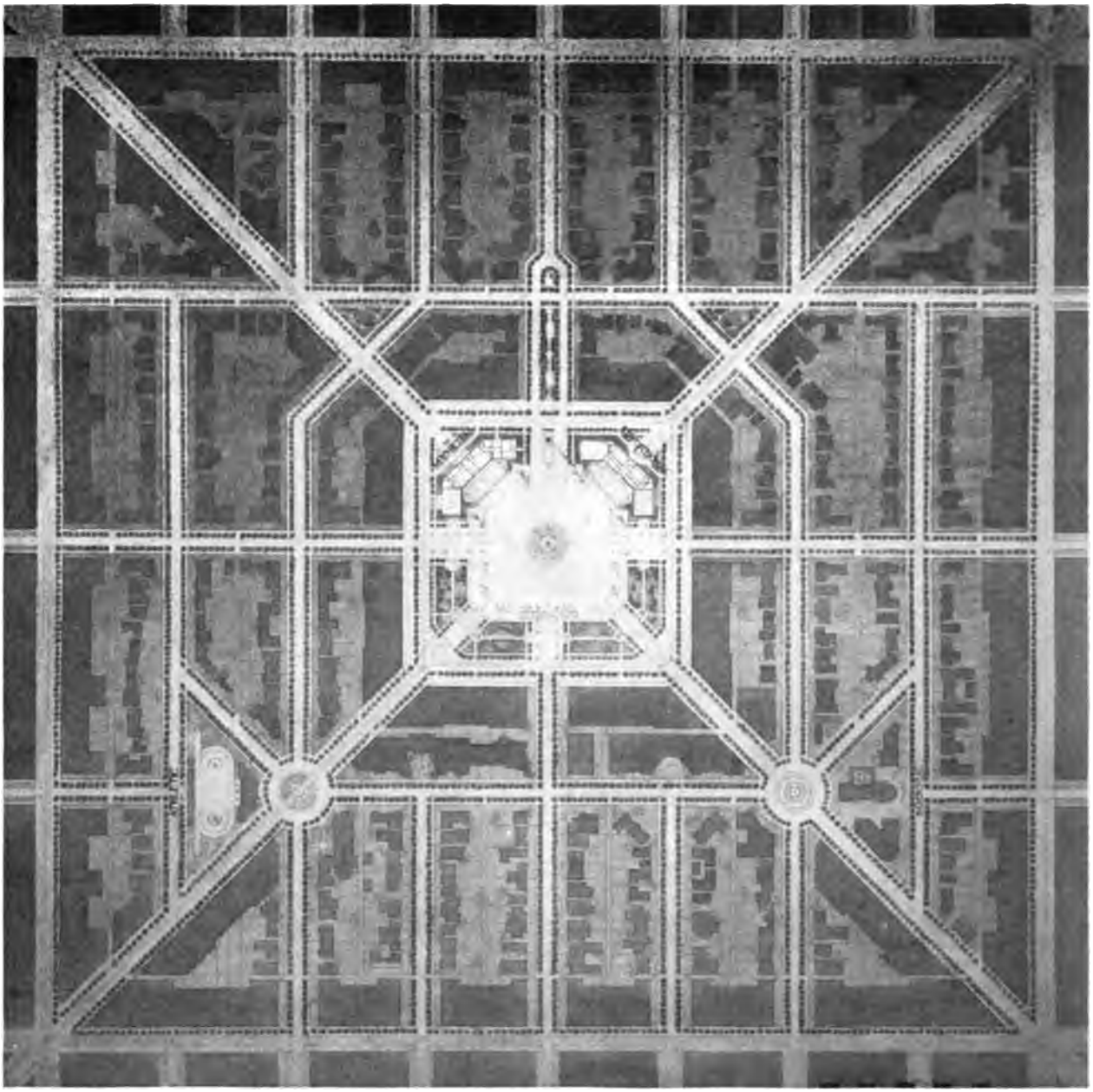
THE plans for the development of Chicago prepared during the years 1906–1908 under the direction of the Commercial Club, generally known as the Burnham plans, propose the extension of existing diagonal streets into areas now unimproved. It is the intersection of two such diagonals in the future southwest section of the city that the authors of this memoir and the accompanying drawings have made the object of their study. They have been guided in this choice by the belief that the Burnham plans are epoch making, and that new steps in the working out of the city streets should be governed by the general lines laid down in this great work. The design they present is, then, an attempt to modify in the most direct and practical manner the present gridiron-like arrangement of our streets so as to be acceptable to prevailing ideas and yet give a grateful relief from the interminable vistas and monotonous repetitions of rectangular plans.

The governing motive of this study, as will be seen from an inspection of the drawings, is the local civic center, subordinate to, but recalling the great municipal center established in the Burnham plan. The position for such a center would be at the intersection of the great diagonal arteries of traffic which would bring the life necessary to create commercial vigor and an animated meeting place for trade, public meetings, and fêtes of various kinds. Around this center have been placed, therefore, the shops, markets, and office buildings necessary for the service of a community of the kind. Back of these shops are courts

BIRD'S-EYE VIEW OF THE CIVIC CENTER

which delivery wagons would use to avoid the obstruction to circulation caused by the use of the sidewalks as loading platforms.

In the square closing the vistas of the diagonals which play so important a part in this plan are placed, on one side, the municipal building with the offices for the aldermen, fire and police stations on the first floor and with assembly and reading rooms on the sec-



PLAN BY RIDDLE AND RIDDLE, CHICAGO

The buildings enclosing the central square are shops, markets, and offices. Other business buildings are located on the diagonals.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 4.

ond; on the other side, the schoolhouse to be used on the broadest educational lines. Between these buildings is placed a monumental column. A fountain is in the center of the square, and the whole composition is closed in by a parkway 100 feet wide.

The plan follows, as has been said, the rectangular arrangement of streets prevailing in Chicago. In addition to the diagonals the authors have carried through the plan a north and a south street intersecting in the square. All other streets they have interrupted, not only for the additional charm thus obtained, but also to prevent the encroachment of traffic and business on avenues devoted to homes.

COMPETITIVE PLAN BY WILLIAM H. SCHUCHARDT

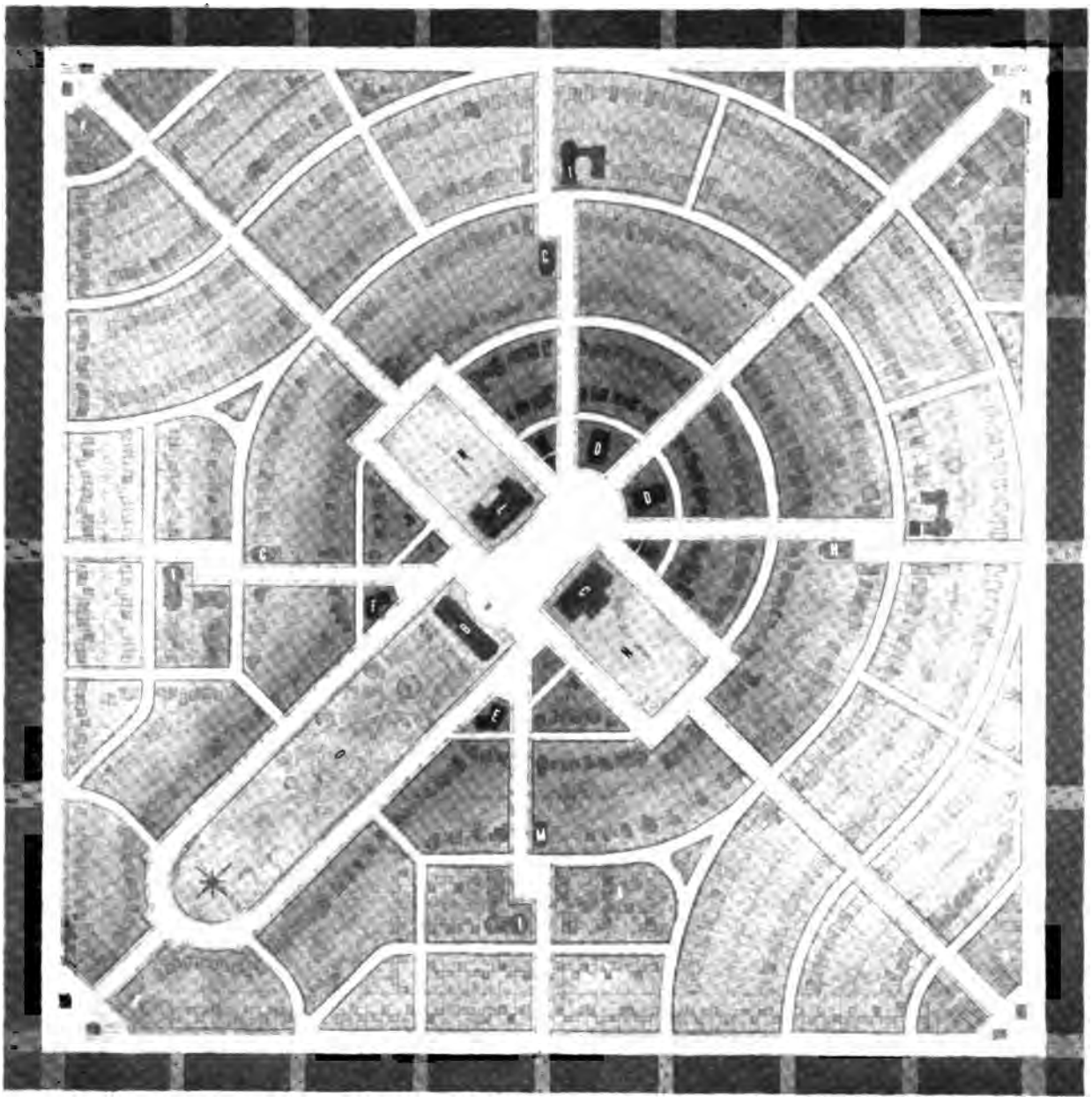
THE author of the accompanying design chose the so-called spider web scheme as the best adapted to the conditions set by the program. In the center of the tract are located the public or semi-public buildings which should be easily accessible from all parts. Facing smaller squares (four in number) and somewhat removed from the noise of street car lines or the lines of greatest traffic, are placed the churches, Y. M. C. A., and Y. W. C. A. buildings, or other clubs and local theaters, and, at the corners of the tract, where more people will gather per hour than at other points, are placed the store buildings for tradesmen. At these corners are also suggested transfer and comfort stations which will not only be of practical value but will also mark the entrance to the diagonal streets.

The relation of the main thoroughfares to the principal buildings is such that long interminable vistas are avoided. Each building serves as an architectural accent at the end of a long vista and yet at no cost of convenience.

In the southwestern portion is placed the park, extending from the center to within a short distance of the future street car crossing. A bandstand at one end and a possible swimming pool at the other will help to make this a popular meeting place. The school playgrounds might also be used by the general public after school hours. Close to the park and near the center are branch police and fire stations and also comfort stations.

The residences are all faced on the narrow curved streets so that their owners may enjoy the charm of apparently meandering ways and also be removed from lines of general traffic. Alleys are shown on the plan as about 10 feet wide. In the opinion of the author

BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY WILLIAM H. SCHUCHARDT

KEY TO PLAN

A. Standardized Cottages.	E. Fire House.	I. Church.	M. Y. W. C. A.
B. Public Library.	F. Police.	K. Stores.	N. Playground.
C. Primary School.	G. Theater.	L. High School.	O. Park.
D. Lodge.	H. Y. M. C. A.		

For statistical data relating to this plan see tables pp. 134–137, Plan No. 14.

a width of sixteen feet, as required by law, is needlessly extravagant. (The arguments for the narrow alley are not necessary here.)

Exact similarity of lot sizes in any scheme but the gridiron is, of course, impossible. The author of this design assumes that the area under consideration will be occupied by wage earners or other people of comparatively small income and has therefore accepted the customary standard size of 25 x 150 feet for the majority of lots. There are cheaper lots which are about 25 x 100 feet and a large number in the southwestern section which are only 17 x 100 feet and are intended for standardized cottages to be built in groups. each house being 17 x 24 feet. In block "A" in the southwestern section the author has shown an arrangement of such cottages with their gardens, suggested by schemes he has seen in Europe during a recent investigation of housing on the Continent and in England. All other blocks are, however, laid out with greater regard for American precedent, excepting that, in the grouping and placing of houses, European model villages serve as guides.

The author has recently drawn plans for the above-mentioned standard cottages which may be grouped in an infinite variety of ways (as indicated in the bird's-eye view) and has found that such cottages having six rooms, cellar, and bath can be built in fairly fireproof units for about $1,375.00 each, under a large contract. The contractors have given assurance that where several hundred such houses may be built at one time, the variety of grouping would not increase the cost. The possibility of beneficent beauty and architectural value in such groups of cottages as against the deadly monotony of the now prevalent military camp arrangement needs only suggestion. The author desists from the desire to here emphasize the need, in this country, of making much out of little, as is universally done in Europe.

In addition to the 1,172 lots reserved solely for residence purposes, there are at the corners of the quarter-sections about 75 properties for business purposes. The second and third floors of these business buildings may be devoted to flats accommodating perhaps 150 or 200 families. As some families will require more than one lot the entire area may be assumed to provide homes for 1,150 to 1,200 families.

COMPETITIVE PLAN BY ALBERT STURR

STUDY of site-planning has led to the conclusion that practical and artistic considerations are interdependent and must be worked out together. In the solution herewith offered the motive has been to demonstrate that a slight modification of the gridiron system, which on level land has many practical advantages, will render possible the introduction of many of those features of civic art which are desirable in a residence district.

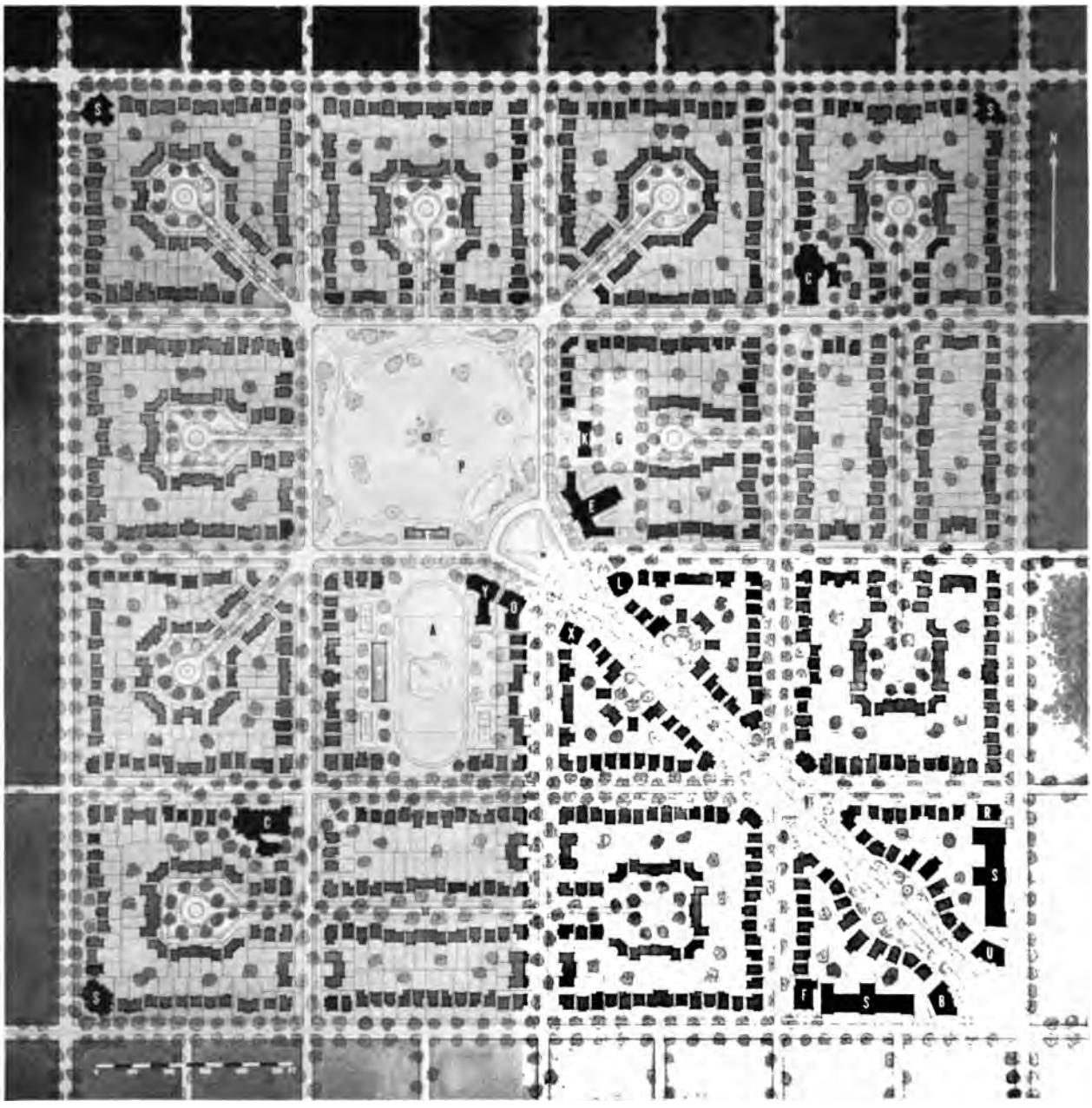
The southeast corner of the site, which is nearest to the city, where street railways intersect and where transportation and business activities will inevitably be most highly concentrated, is designated as a business center and main entrance. A diagonal boulevard leads to a park and to a plaza upon which are located various institutions forming a social center. Churches face small plazas in the midst of more strictly residential sections. Several court groups provide for those who prefer a more secluded environment and freedom for the frolics of young children. Street views are given a variety of interest by parks and open spaces with their embellishments, by the court vistas, and by interrelations in sizes, designs, and positions of houses.

A grouping of city homes in orderly relation to one another and to social and business centers, together with ample provision for outdoor recreation, will suggest and encourage mutual dependence and co-operation, the lack of which is so evident in the appearance of our cities.

Extension through the site of streets leading to it will co-ordinate the section with surrounding territory, promote neighborliness, discourage exclusiveness, and preserve the value of public institutions.

The fraternal and Y. M. C. A. buildings are available for entertainments, clubs, etc.; both have direct connection with the athletic field. The school auditorium will serve as a general meeting hall, rendering a separate building for this purpose unnecessary.

BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY ALBERT STURR

KEY TO PLAN

A. Athletic Field.
B. Savings Bank.
C. Church.
D. Grandstand.
E. School.
F. Fire Station.
G. Playground.
K. Kindergarten.
L. Library.
O. Fraternal Orders.
P. Park.
R. Police Station.
S. Store.
T. Park Shelter.
U. Post Office.
X. Unassigned Public Building.
Y. Y. M. C. A. Building.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 5.

The park shelter with its minor accommodations may serve the convenience of the residents in general. A pond for wading, boat-sailing, and skating by the children is located in the park near the social center.

Upon examining a comparison of the practical features of the accompanying plan and statements of quantities and costs, with those of the gridiron system, we will find that by the plan herewith submitted:

First. The amount of original capital investment may be reduced.

Second. The cost, per lot, of development to the point where building operations may properly begin is slightly greater. This is a result of liberal reservation of land for park, playground, and athletic field. The saving to the home-builder, however, by means of co-operative management such as is necessary for realization of a development of this kind, and the proximity of facilities for recreations, not to mention a multitude of other benefits, more than compensate for this.

Third. The cost to the general city government for maintenance will not be greater. The reduction of length of streets and area of street paving enables corresponding reductions in the cost of lighting, cleaning, and repairing same. Elimination of rear alleys increases cost of garbage collection, but considerably relieves police duties.

Fourth. General traffic and fire apparatus may move through the section with as much directness and rapidity as is necessary in a residence section.

COMPETITIVE PLAN BY A. C. TENNEY, M. D.

THIS scheme of development is based upon a study of the physical environment and necessities of mankind in latitude 42° to 43° north (or south). Longitude has no special bearing in our scheme.

The supply of direct sunshine to every "living" room, ample air space and circulation, stability in construction, and a design which will facilitate co-operative endeavor are the leading thoughts.

A minimum of two hours' direct sunshine entering every living or sleeping room is secured. The scientific basis for the plan lies in a knowledge of the earth's inclination on its axis and the resulting distribution of sunlight at various seasons.

Between 42° and 43° north (Chicago's latitude) we find that on June 23d (the longest day of the year) the sun approaches the zenith so that its rays strike the earth at an angle of 71° with the horizontal at noon. In consequence, when the days are longest (March 21st to September 21st) and direct sunlight the least essential, the sun's rays strike the earth so nearly perpendicular that only where buildings are most congested and very tall is the earth, or are those upon it, denied the direct sunlight.

During the cold winter days, the earth's inclination on its axis causes the sun's rays to approach the earth from a point south of the equator. The angle of approach on the shortest day, December 23d, is 25° with the horizontal at noon, and all objects placed in the path of the sun's rays cast shadows approximately three-tenths (3/10) greater than their height.

It is during this season of the year, when the days are shortest, when the stimulating effect of the sun's light and heat is most needed, that the improper lighting of buildings and homes is most evident. This short-day period from September 21st to March 21st (with the shortest on December 23d) must be given special attention in any scientific plan for natural lighting.

This scheme, therefore, leads directly to the details of construction and relative position of the individual buildings, and from that to the larger plan which is a deduction or consequence rather than a "scheme beautiful." It becomes necessary, therefore, to

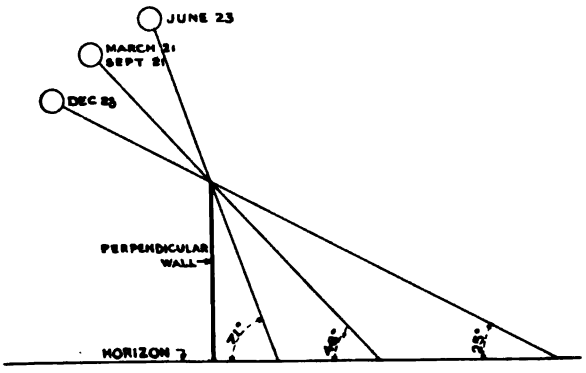


DIAGRAM 1

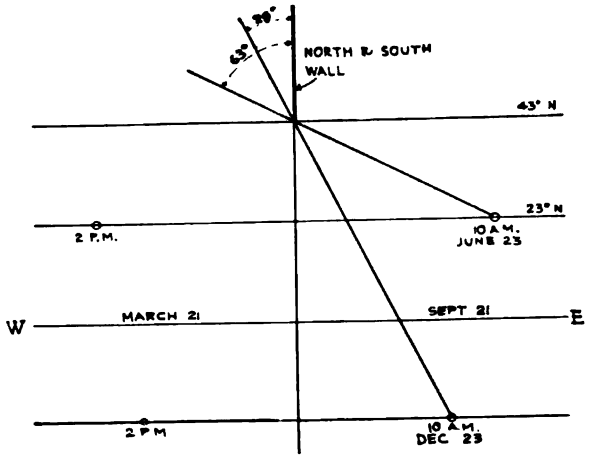
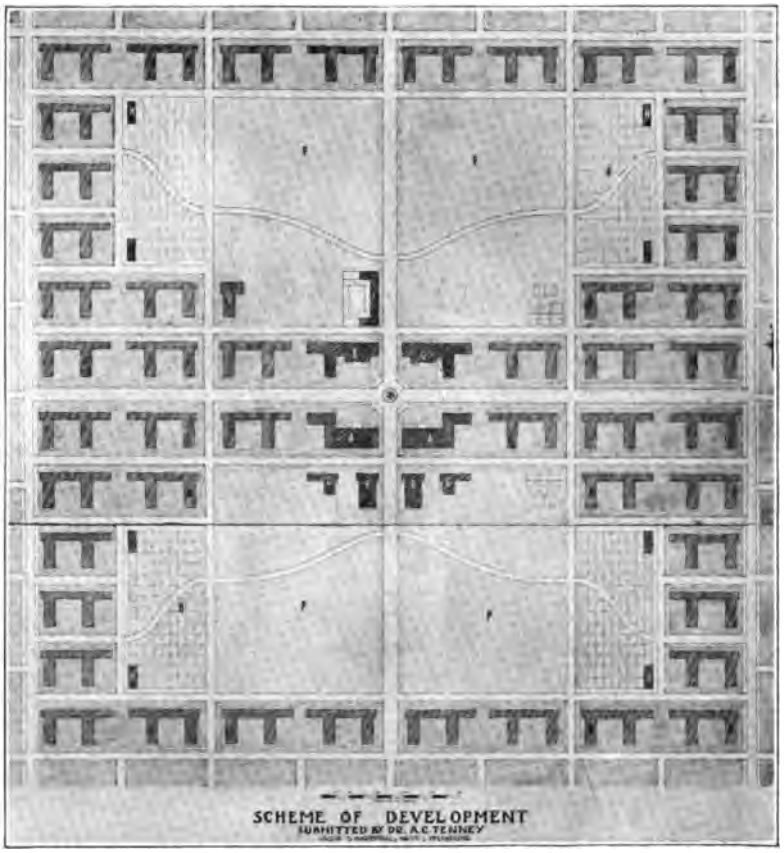


DIAGRAM 2

disregard the usual method of subdividing into lots, of placing streets and alleys, and of constructing the apartments themselves.

In the present plan the buildings are but three stories high (41′ 6″) and on December 23d would cast a shadow fifty-nine feet and four inches. It is assumed that they may be



PLAN BY A. C. TENNEY, M. D.

KEY TO PLAN

A. School buildings (containing 92 rooms, providing 15 sq. ft. of floor space to each child).
B. Church buildings (seating capacity of 600 each).
C. Children's playgrounds with day nurseries.
D. Civic center building containing: 1st floor—Dining rooms and kitchen and small day nursery, women's club rooms, committee rooms, auditorium seating 615, postal station, drug store, doctors' offices, and a one-room emergency "hospital," and accommodations for one nurse.
2nd floor—Library, men's smoking and billiard rooms, toilet, etc.
3rd floor—Dance hall and roof garden.
E. Civic center building containing: basement, community laundry, natatorium, and heating plant.
1st floor—Administration offices, and shops for mechanical pursuits.
2nd floor—Technical school and technical library.
3rd floor—Indoor gymnasium, locker rooms, and shower baths.
F. Dressing rooms and shower in connection with outdoor baths.
G. Isolation hospital accommodating ten patients and attendants.
H. Tool houses with lockers for "individual gardens."
N. Apartment buildings, each with twenty-seven (27) apartments.
O. Apartment buildings with first story on street side given up to stores and commercial rooms of all varieties.
P. Co-operative farms.
Q. Allotment gardens.

STATISTICAL DATA

(1) Average frontage of building lots, 300 feet.
(2) Average superficial area of building lots, 45,000 sq. ft.
(3) The number of families to be accommodated is 1232.
(4) The number of feet of public sewers proposed is 8680.
(5) The number of square yards of street pavement proposed is 102,333.
(6) The number of square yards of sidewalk proposed is 43,093.
(7) The percentage of total site in open streets is but 13.5%.
(8) The percentage of total site in other public spaces is 14.9%.

increased to or replaced by five-story structures (62′ 6″ high), in which case this shadow on December 23d, ninety feet long, would fall at the foundation line of any other buildings north. Thus future tenants are guaranteed against any violation of their rights to direct sunlight unless apartments are constructed more than five stories high, which is not likely.

The attached diagram No. 1 on p. 84 is illustrative.

To obtain a maximum east, south, and west frontage, a modified "court" plan of construction is adopted. In the plans submitted the total east, south, and west exposure in each apartment building is approximately 700 feet with but approximately 240 feet north frontage.

The laws governing the sun's distribution of light are used as the basis for determining the proportions of the courts between the wings extending north and south. By consulting diagram No. 2 it is readily seen that the shadows cast east and west by a straight north and south wall vary from 29° to 63° at various times during the year.

Averaging nature's extremes gives us 46°, and 45° may be accepted as a practical working basis. This is exactly the angle by which an equilateral quadrangle is bisected through its corners. This establishes the principal in practice that the space east and west, between the southwardly extending buildings, must be as great as the length of these buildings. It may be more but should never be less. Space forbids statement of details, but this plan insures a minimum of two hours of direct sunlight to any and every room facing east, south, or west, on the shortest day of the year, and adequate shade in the hottest season.

COMPETITIVE PLAN BY CHARLES A. TIRRELL

SINCE the existing car lines meet at the northeast corner of the property and this location is nearest to the city, the nucleus of the business center would be placed at this point, and allowed to spread, as occasion demands, west and south along the street car lines, thereby making business development as elastic as possible. It should be made imperative that no business be allowed off these boundary streets except as shown on the plan at the northeast corner of the property.

The boundary streets should be widened to 120 feet for a 660-foot block both south and west, for present business needs, and all buildings along the boundary streets kept back to the limit of a 120-foot street.

The buildings in the business center would be of brick, of good design, and not more than two stories in height. Provisions are made here for banks, theaters, post office, police and fire station, and an administration building, besides the stores and shops, offices for doctors, dentists, lawyers, etc.

Small stores and shops (delicatessen) that are needed for the immediate wants of the tenants should be allowed on the boundary streets whenever the demand is sufficient to warrant patronage.

Within the business center is proposed a market center where all vegetables, fruits, etc., may be sold, thereby keeping them from the front sidewalks where they are usually found to be a nuisance.

The market building should be of pleasing design to present a good façade from the axial streets leading to the square.

To meet the social requirements of the inhabitants it is suggested that a park be centrally located where all may be accommodated with athletic sports and other forms of recreation. At the north end of this park the school buildings have been grouped and, in connection, ample space for children's playgrounds provided.

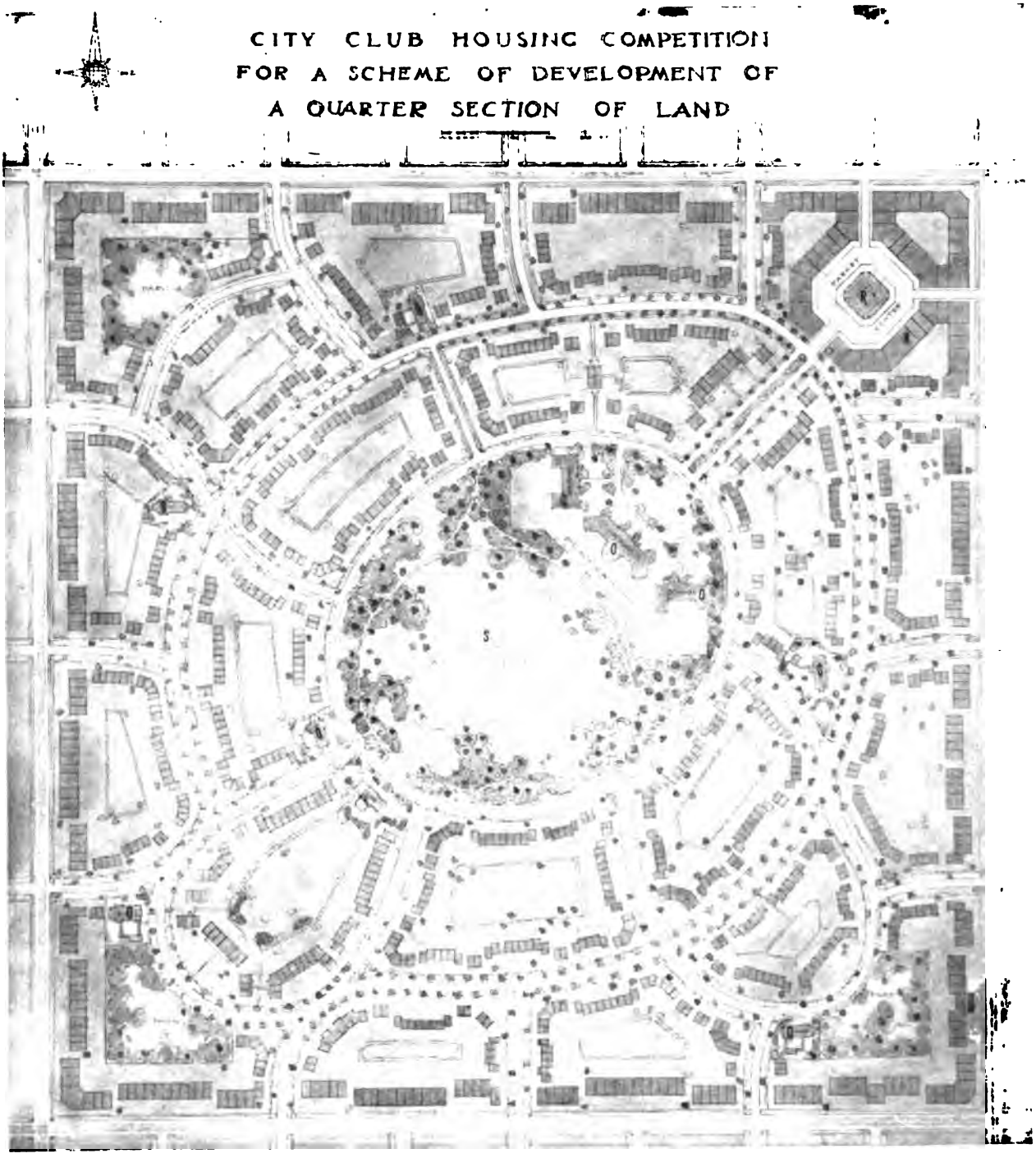
In these school buildings there would be located reading-rooms, library, lecture halls, etc. Such an arrangement should tend to bring the children and adults into closer social relations and necessarily greatly benefit the community.

Spaces for three other small public parks or recreation grounds have been provided for, places where mothers and small children may go and not be annoyed by athletic games and noisy children.

Provision has been made for six churches, well spaced and so located that they give picturesqueness to the immediate surroundings and greatly enhance the street picture.

A wide street or boulevard has been carried completely around the property connecting with all the entrance streets, and extending to the park by a parked roadway on the northeast axis of the school group. This street and all entrance streets are 66 feet wide with a 24-foot pavement; all other streets are 44 feet with an 18-foot pavement. Since all through traffic should be discouraged by the street arrangement, the above widths for streets are ample for a scheme of this type.

The planting of trees along the streets, boulevard, and parkways should not be too



PLAN BY CHARLES A. TIRRELL

KEY TO PLAN

N. Business Building.
O. School.
P. Clubhouse.
Q. Church.
R. Market Center.
S. Park and Athletic Field.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 8.

stiff, but rather irregular, scattered and in groups at good vantage points, to strengthen street vistas and give settings to the buildings.

It is suggested that apartments should be placed along the boundary streets occupying spaces above the shops, and in all building spaces along boundary streets up to such time that the space is needed for business purposes. Apartments may also be located on either side of the parked drive leading to the school group.

Houses may be detached, semi-detached, and in groups, and should be of plain, honest construction with due regard to local materials and other local conditions.

The control of the design for houses and groups should never be relaxed.

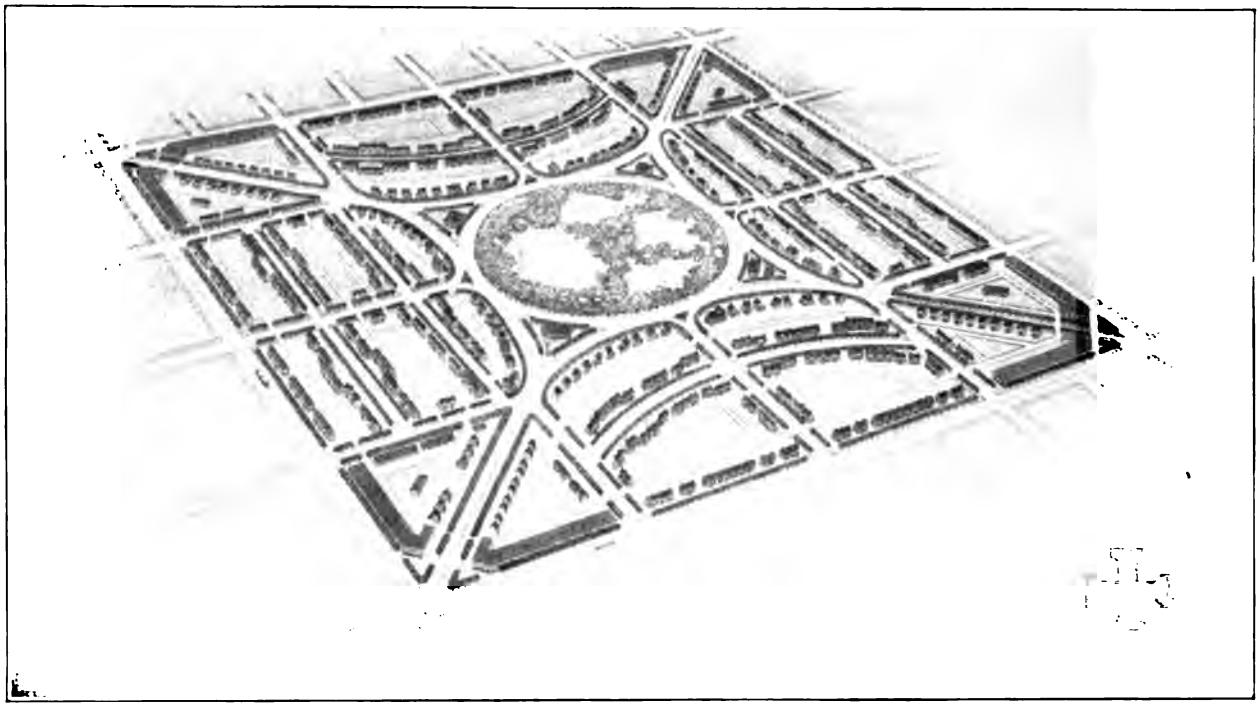
No houses should be placed nearer than 20 feet to the front or rear lot lines and ample spaces should be provided for allotment gardens, recreation grounds, tennis courts, children's playgrounds, etc., in the interior spaces of the building blocks.

COMPETITIVE PLAN BY PHELPS WYMAN

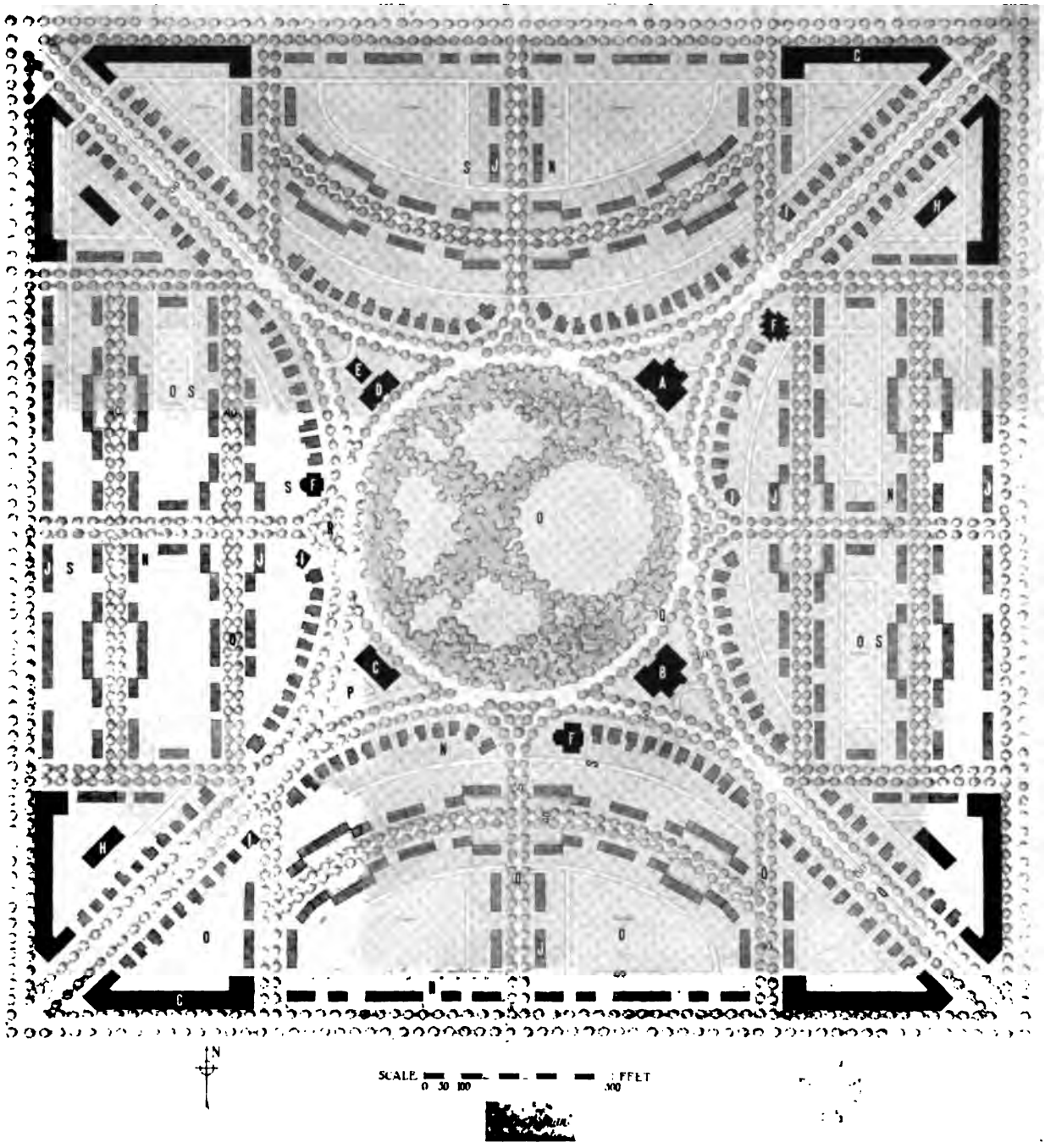
WHILE the accompanying plan is designed as a unit, the land represented is regarded as only a small part of a larger entity. It does not try to create a complete town but to construct only a residential section of a much larger city. Places for the labor, trade, and amusement of adults are mostly elsewhere except as they should belong to every residential locality. There is, however, in this plan complete provision for children, both in the way of school and play, and there are local gathering places for their elders such as churches, clubs, political meetings, and provision for neighborhood business in stores and offices.

Street articulation with the rest of the city is furnished by diagonal arteries which lead also to all neighborhood gathering places except stores and offices, which are near the street car lines. The rest of the streets are regular enough to furnish good building lots, irregular enough to be interesting, direct enough to be convenient to all residences facing them, and indirect enough to prevent them from becoming general city thoroughfares.

The inhabitants are considered largely as working people. Facing the park are larger lots and separate houses for professional and business men, while on the minor streets the lots have ample light and room; but to economize space and to make a more attractive appearance the houses are grouped into larger units — not, however, by creating apartments. Lots are not made unduly deep that rear tenements and unnecessary sheds may be discouraged; but provision for gardens is made in separate interior areas where space may be had or not, according to the will of the adjacent residents.



BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY PHELPS WYMAN

KEY TO PLAN

A. High School.
B. Grade School.
C. Social Hall and Gymnasium.
D. Library.
E. Fire House.
F. Church.
G. Stores and Offices.
H. Public Garage or Stable.
I. Dwelling House, detached.
J. Dwelling House, attached.
N. Building Lot.
O. Park and Playgrounds or Allotment Garden.
P. Bathing Pool.
Q. Street.
R. Square.
S. Alley.

For statistical data relating to this plan see tables pp. 134–137, Plan No. 10.

Because of the intrusion of diagonal streets the street area shown is no more or less than with the better type of rectangular subdivisions; nevertheless, because the bulk of the traffic is thrown upon the diagonal streets, the other pavements can be narrower, and first cost and maintenance be reduced. The chief claim to economy, however, is in the gain in time and convenience to the inhabitants.

Along with greater convenience, though secondary to it, is the esthetic appearance of the subdivision. A straight street is indicative of grandeur; but to receive its proper effect, its buildings must be of like character. The majority of streets in this quarter-section are sufficiently curved to give a quiet effect and continually changing views as one passes along them. Those streets which are straight, and they are introduced because of the preference of some for straight residential streets, have their views always stopped by objects at their termini. In city planning there is no monotony like long, continuous, straight streets which have no apparent end.

COMPETITIVE PLAN BY ALFRED B. YEOMANS

IN the accompanying plan the section is considered as an intregal part of the whole city. Any adequate street plan for the city as a whole must provide for diagonal arteries radiating from the central district. One of these diagonals is assumed to pass through the quarter-section under consideration. This diagonal naturally becomes the main business street of the section, and the stores and offices are therefore located on it. A direct north and south and an east and west street across the section provide additional means of direct communication between adjoining sections.

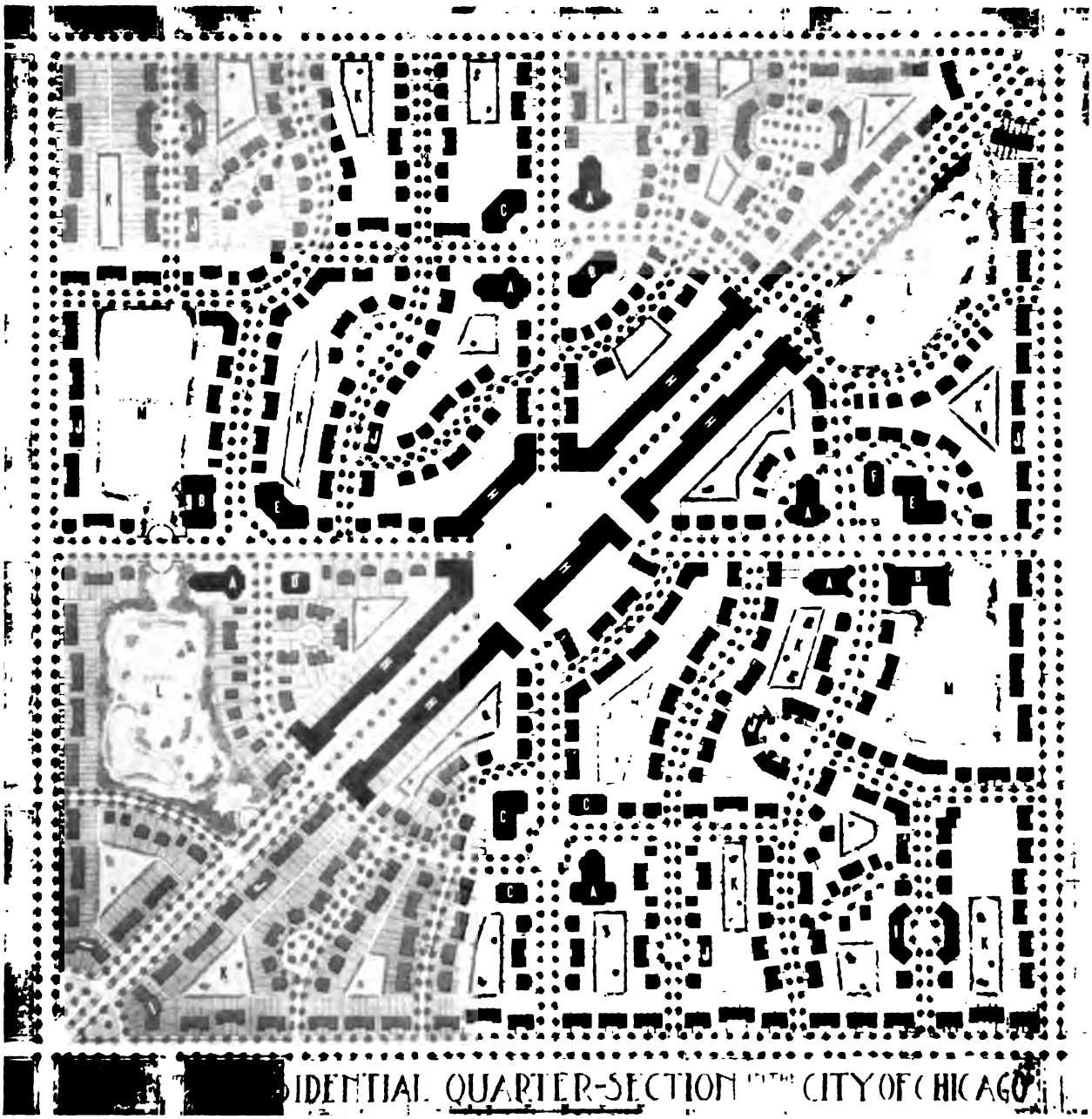
The writer does not believe that any purely rectangular system of streets, irrespective of their architectural embellishment or of the effective grouping of buildings along them, can be made as satisfactory esthetically as a system containing at least some diagonal or curving streets. While the main traffic streets are straight and unobstructed, purely residence streets are therefore made irregular or curving, freedom from traffic and more variety in street pictures being thus secured.

Four groups of buildings serving the common social needs of the community are provided. It is believed that by keeping the social group small and by providing adequate facilities for its activities close at hand, it may develop a greater degree of coherence and hence greater effectiveness as a factor in the life of the whole city.

Two parks of 4.5 acres and 3.8 acres respectively are provided and two playgrounds of 2.7 and 2.3 acres. The latter are directly connected with a school building so that they may serve both as school and public playgrounds, the school building being utilized as a fieldhouse and social center out of school hours.

BIRD'S-EYE VIEW OF THE QUARTER-SECTION

Except for a few apartment buildings only single family dwellings are provided. Dwellings are set not less than 15 feet back from the street line and 10 feet from side lines. At intervals a group is set farther back so as to avoid a monotonous row of façades and to provide opportunity for interesting front garden treatment. Houses in blocks have a passage between each pair giving access from the street to the rear yard, the necessity of alleys being thus obviated.



PLAN BY ALFRED B. YEOMANS

KEY TO PLAN

A. Church.
B. School.
C. Lodge Hall.
D. Public Library.
E. Auditorium.
F. Fire House.
G. Y. M. C. A.
H. Stores and Offices.
I. Apartments.
J. Houses.
K. Private Park.
L. Public Park.
M. Playground.

For statistical data relating to this plan see tables pp. 134-137, Plan No. 17.

IV. NON-COMPETITIVE PLAN

BY

FRANK LLOYD WRIGHT

PLAN BY FRANK LLOYD WRIGHT

"Fool! The Ideal is within thyself. Thy condition is but the stuff thou shalt use to shape that same Ideal out of."— *Carlyle.*

ACCEPTING the characteristic aggregation of business buildings, flats, apartments, and formal and informal dwellings for well-to-do and poor natural now to every semi-urban section about Chicago, this design introduces only minor modifications in harmony with the nature of this aggregation.

The proposed site locates the given tract upon the prairie within eight miles of the city's center, and so makes it an integral feature of Chicago. The established gridiron of Chicago's streets therefore has been held as the basis of this subdivision. The desired improvements have been effected by occasional widening or narrowing of streets, shifts in the relation of walks to curbs, the provision of an outer border or parkway planted with shrubbery to withdraw the residences somewhat from the noisy, dusty city streets (shelters in which to await cars are features of this parkway at street crossings), the arrangement of a small decorative park system planned to diversify the section in the simplest and most generally effective manner possible, and, finally, the creation of a new system of resubdivision of the already established blocks of the gridiron.

Grouped within the small park system are recreation features such as groves, open playgrounds, tennis courts, pools, music pavilion, athletic field, and sheltered walks. The groups are so planned that adults and young people are attracted to the less quiet portion of the park near the public buildings, the children and more quietly inclined adults to the small park in the opposite direction.

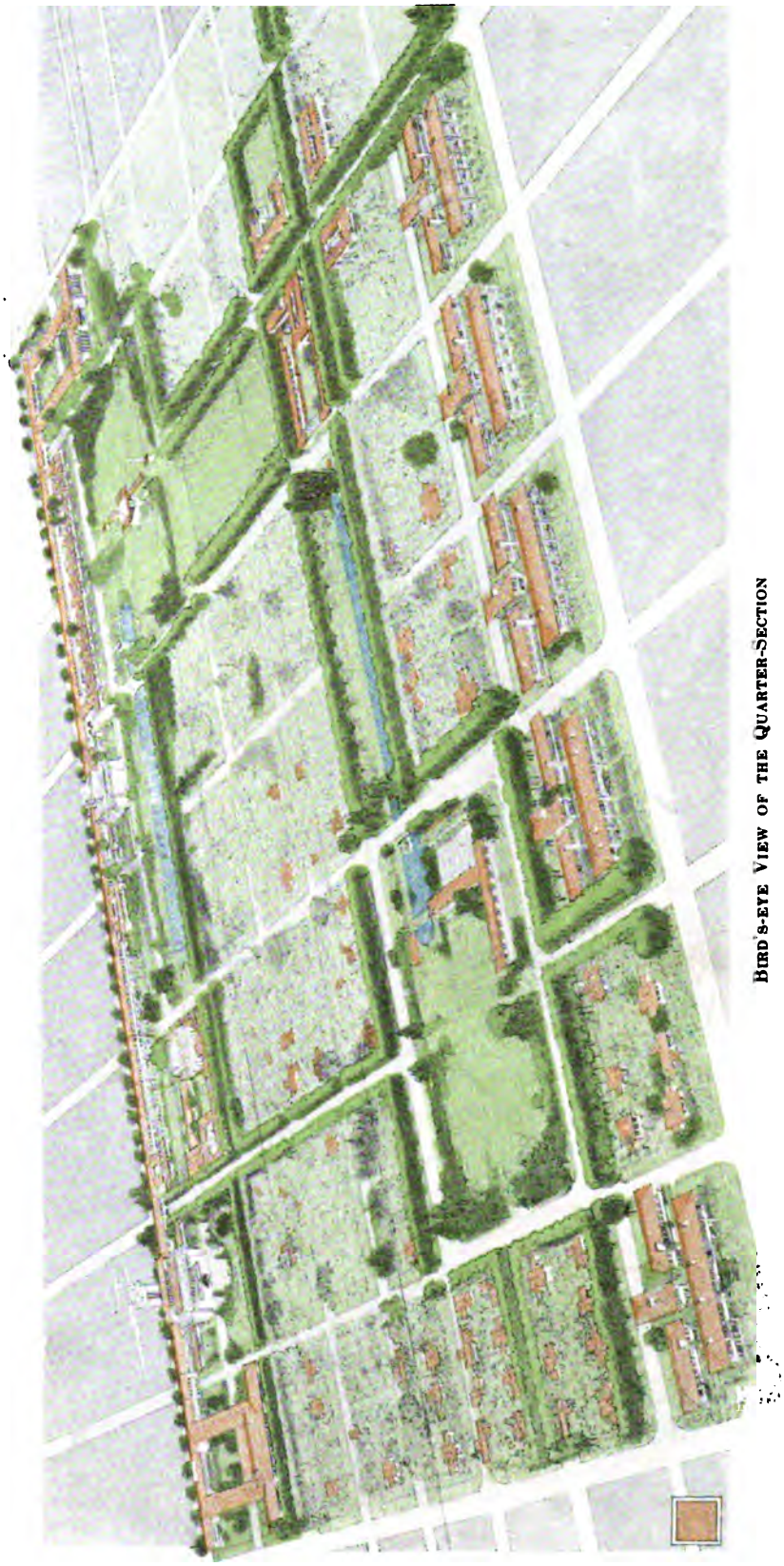
The inevitable drift of the population toward the business center of the city is recognized in the grouping of the business buildings, more formal dwellings, and apartment buildings, large and small, on the streets next to the railway going to the city's center. A branch bank, post office, temple of worship and secular clubhouses, branch library and exhibition galleries, cinematograph and branch of civic theater are also grouped with the business buildings; but all these are grouped as features of the small park system. To the rear of the theater and also located on the street railway to town is the central heating plant and garbage reduction plant with smokestacks made into sightly towers. Here also there is a public garage and near the center of this side of the block a public produce market is designed in the form of a large open court, the court paved and screened from the park by a simple pergola.

These various buildings are all utilized as "background" buildings and so are continuously banked against the noisy city thoroughfare, and the upper stories are carried overhead across intervening streets to give further protection from dust and noise, and to provide, in a picturesque way, economically roofed space for the combination business and dwelling establishments that cling naturally to the main arteries of traffic.

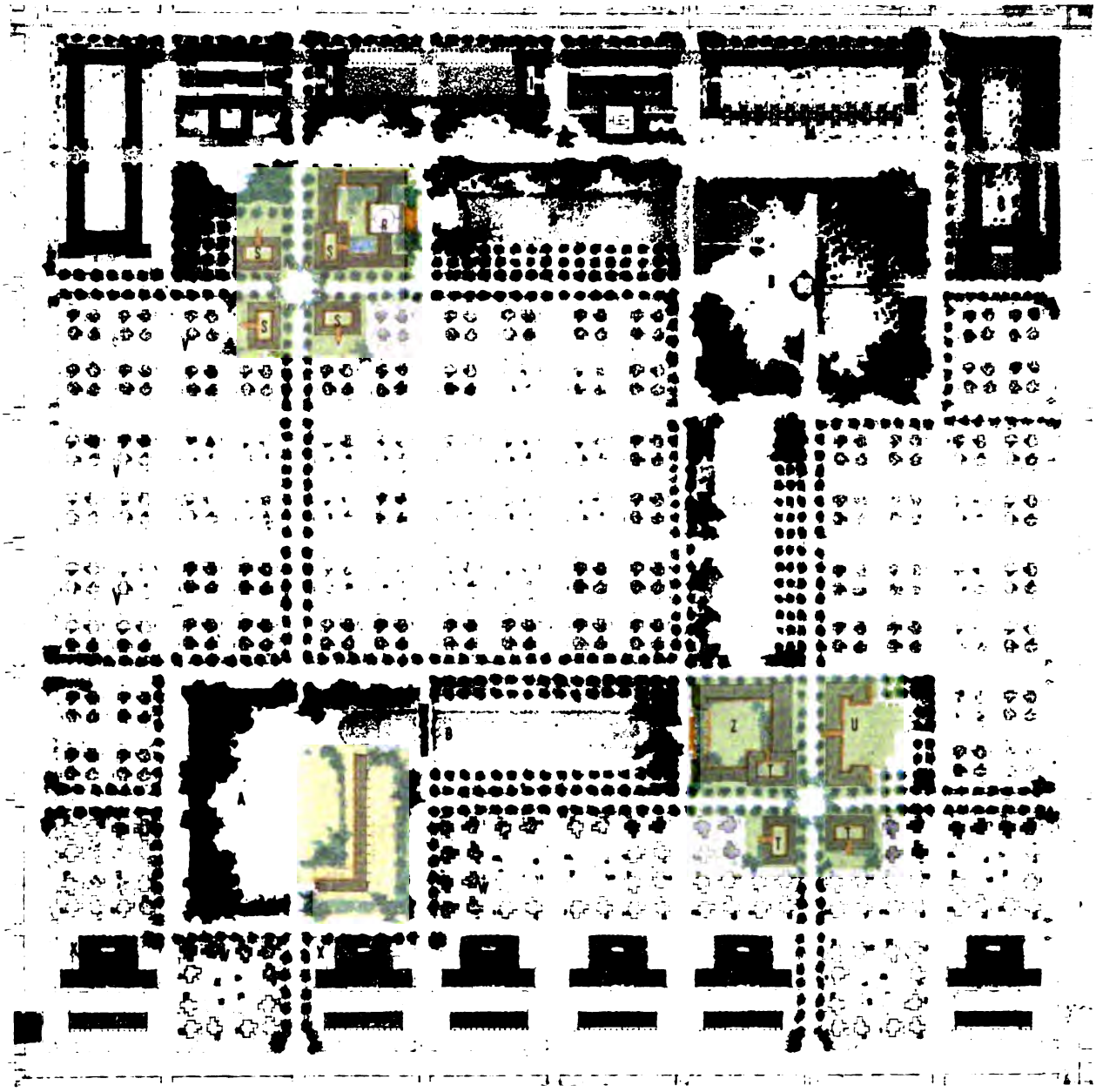
By thus drawing to one side all the buildings of this nature into the location they would naturally prefer, the greater mass of the subdivision is left quiet and clean for residence purposes. No attempt is made to change the nature of these things as they naturally come. The commercial buildings, however, are arranged with a system of interior courts which care for all the necessities that are unsightly. Space is thus provided, quietly

and in order, adapted to all commercial requirements, with great economy of expenditure necessary for exterior effect, and without the exposure of unsightly conditions. The market has been treated as a desirable picturesque feature of the whole arrangement. The bank and post office are located where they will be passed morning and evening to and from the city as are the various shops. There is but one temple for worship, but there are sectarian clubrooms opening on courts at the sides and rear and in connection with it.

The library has top-lighted galleries for loan collections and a cinematograph hall. With this library are grouped separately a boys' club, branch of Y. M. C. A., and apartments for men. The school buildings, kindergarten, teachers' departments, and Y. W. C. A. building are grouped on the opposite side of the quarter-section on the axis of the children's recreation grounds. A shallow boating and swimming pool and a zoölogical loan collection from, say, Lincoln Park are features of the park system on this side. All building groups have internal green courts for privacy as well as their relation to public playground, greensward, and shrubbery. The space between this park portion of the quarter-section and the outside city street to the south is devoted to an inexpensive type of detached dwelling, with



BIRD'S-EYE VIEW OF THE QUARTER-SECTION



PLAN BY FRANK LLOYD WRIGHT

KEY TO PLAN

A. Park for children and adults. Zoölogical gardens.
B. Park for young people. Bandstand, refectory, etc. Athletic field.
C. Lagoon for aquatic sports.
D. Lagoon for skating and swimming.
E. Theater.
F. Heating, lighting, and garbage reduction plant. Fire department.
G. Stores, 3 and 4 room apartments over.
H. Gymnasium.
I. Natatorium.
J. Produce market.
K. Universal temple of worship, non-sectarian.
L. Apartment building.
M. Workmen's semi-detached dwellings.
N. Four and five room apartments.
O. Stores with arcade.
P. Post Office branch.
Q. Bank branch.
R. Branch library, art galleries, museum, and moving picture building.
S. Two and three room apartments for men.
T. Two and three room apartments for women.
U. Public school.
V. Seven and eight room houses, better class.
W. Two-flat buildings.
X. Two-family houses.
Y. Workmen's house groups.
Z. Domestic science group. Kindergarten.

STATISTICAL DATA

304 Seven and eight room houses.
120 Two-flat buildings, five and six rooms.
18 Four-flat buildings, four and five rooms.
6 Fourteen-family workmen's house groups.
12 Seven-room semi-detached workmen's houses.
6 Apartment buildings, accommodating 320 families in all.
4 Two and three room apartment buildings for women, accommodating 250 to 300.
Total, 1032 families and 1550 individuals (minimum).

closed interior courts. Facing the outside city street are modest, grouped cottages for working men and women.

The division of the small park systems into two groups draws the children going and coming from school, kindergarten, and playground in the direction opposite to the business quarter.

The remainder, the larger proportion of the quarter-section, has been left intact as a residence park, developed according to the principle of the "quadruple block plan." This remaining area has been kept as large and unbroken as possible, as it is from the sale of this property that the profit would come that would make the park system possible.

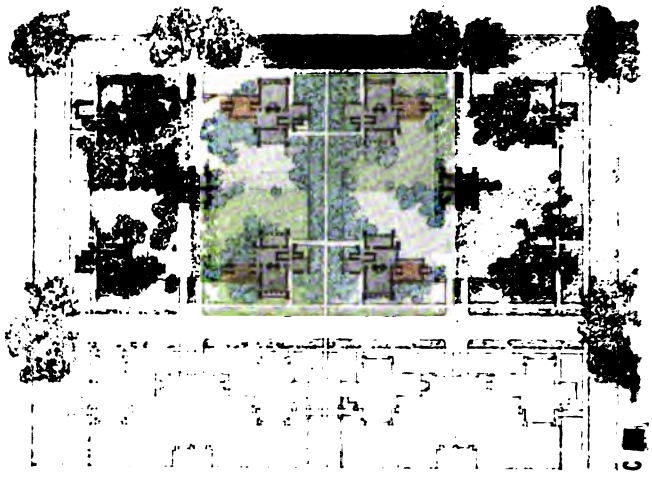
In this real body of the subdivision an entirely new arrangement of the resubdivision of property is shown, dispensing with alleys, and wherein the simple expedient of an established building line protects every individual householder from every other one and insures maximum community benefits for all.

At the same time it is possible to put as many houses in all necessary variety upon the ground (several schemes of arrangement are shown), and still maintain these benefits, as is possible now under the wasteful, absurd, and demoralizing practice which universally obtains, wherein the unsightly conditions of city life are all exposed to the street, and either a dirty alley is open to the sides of the blocks or useless rear courts are left with all outhouses abutting upon them, rendering the prospect of the entire neighborhood unsightly to every one and making impossible any real privacy for any one. Under the present system of subdivision, all attempts at beautifying the premises may prove futilities, as any man turned loose upon his own lot may render himself obnoxious to his neighbors.

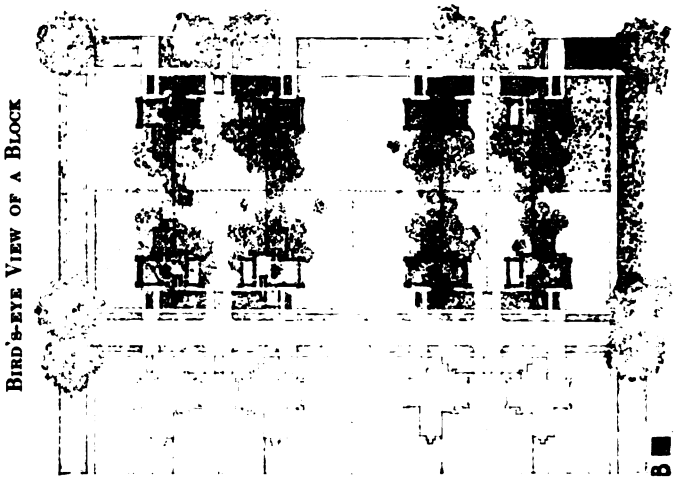
The "quadruple block plan" will prove immune from the possibilities of such abuse. Each householder is automatically protected from every other householder. He is the only individual upon the entire side of his block. His utilities are grouped to the rear with his neighbors' utilities, and his yard, front or rear, is privately his own. His windows all look upon open vistas and upon no one's unsightly necessities. His building is in unconscious but necessary grouping with three of his neighbors', looking out upon harmonious groups of other neighbors, no two of which would present to him the same elevation even were they all cast in one mould. A succession of buildings of any given length by this arrangement presents the aspect of well-grouped buildings in a park, *of greater picturesque variety than is possible where façade follows façade.*

Architectural features of the various buildings in the general public group recognize and emphasize in an interesting way the street vistas, and nowhere is symmetry obvious or monotonous. The aim has been to make all vistas equally picturesque and attractive and the whole quietly harmonious.

The virtue of this plan lies in the principle of subdivision underlying its features — the practical, economic, and artistic creation of an intelligent system of subdivision, insuring greater privacy together with all the advantages of co-operation realized in central heating, shorter sewers, well-ordered recreation areas, the abolition of all alleys, fewer and shorter cement walks and driveways, and airiness of arrangement in general with attractive open vistas everywhere. Always there is the maximum of buildings upon a given ground area, dignity and privacy for all.



C



B

Bird's-eye View of a Block

A

EXPLANATION OF ALTERNATIVE BLOCK ARRANGEMENTS

A. Quadruple re-subdivision of city block by means of single cross street and parterres into four sub-blocks. Four houses grouped at center of each sub-block about an interior court enclosed by low walls — ¼ of the enclosure available to each of the four houses.
One entrance to one house only on each side of each sub-block. No alleys — houses revolving in plan so that living-rooms and verandas face outward and kitchens inward to courts. A single plan used thus is always presented at a different angle in harmonious groups of four.

B. Same. Single cross street — no parterres. Houses grouping across the streets increasing interior court gardens and giving direct access from street to all houses without parterres.

C. Same. Each of the four houses moved to exterior angles of the four lots of the sub-block — grouping uniformly in fours equally distant from each other both ways, garages at center. Each group connected by low walls about eight feet back from public walks. Major area of each lot suited for private use as a garden.
Schemes might be rhythmically interchanged in some well-balanced arrangements.

There is an idea in this plan of subdivision which I believe to be valuable to the city and immediately available wherever several blocks remain without substantial improvement, because it may be put into practice without concession to the cupidity of the average real estate man, since he gets as many lots to sell under this system as he does in the one now in use. Moreover, the quadruple arrangement insures to the purchaser greater freedom and privacy with no decrease of any privileges he now enjoys. It is as valuable for low cost cottages as for luxurious dwellings.

Artistically this principle is susceptible of infinite variety of treatment without sacrificing the economic advantages which the householder gains through commercial repetition and to which he is entitled. The individual unit may vary harmoniously and effectively with its neighbors, without showing as under present conditions veritable monotony in the attempt to be different.

In skilled hands these various treatments could rise to great beauty, but, even if neglected, the nature of the plan would discipline the average impulse of the ordinary builder in a manner to insure more harmonious results.

Other rhythms in grouping than those suggested here are easily imagined, so that all the charm of variety found in the Gothic colleges of Oxford could easily find its way into the various workings of the underlying scheme.

Much has been written, said, and done recently in relation to civic planning all over the world. For the most part, what has happened with us in this connection is what has happened to us in individual building: we are obsessed by the old world thing in the old world way with the result that, in this grim workshop, our finer possibilities are usually

handed over to fashion and sham. Confusing art with manners and aristocracy, we ape the academic Gaston or steal from "My Lord" his admirable traditions when our own problems need, not fashioning from *without*, but development from *within*.

FRANK LLOYD WRIGHT.

V. REVIEWS OF THE PLANS

ÆSTHETIC REVIEW OF THE PLANS

By William B. Faville, F. A. I. A.

THE major portion of this review is confined to an analysis of the plan placed first, for this plan most clearly illustrated the points discussed in the review; but the analysis holds equally in reference to the other plans in so far as the points discussed are embodied in or omitted from them.

Most of the plans are lacking in emotional expression—they fail to realize that the temperamental nervousness which characterizes us as a people must find an outlet in variety and not in monotony; that this should be expressed by the foiling of sweeping roads against dignified approaches; of playfulness and charm against severity; of picturesque effects against formal vistas. They fail in the endeavor to create in plan an expression of the varying emotions of which life is full, and to portray the ideals for which our civilization is striving, all of which it is possible to denote within the limitations prescribed by good taste in architectural and æsthetic experiences.

Many of the plans fail because of the even tone or density of population over the entire area and because they introduce only slight variations from the American type of city plan, which is that of streets crossing at right angles with occasional diagonals thrown in for good measurement, a type of plan resulting from defective planning principles.

The geometrical type based on a unit capable of endless repetition, as suggested by several of the plans and distinct from the gridiron type, has been carefully developed by theorists in the past, but not often followed in construction. The rigidity and monotony of this type of solution has not met with the approval of the city builders and happily has been left behind.

Many of the solutions have provided adequately for the physical and social development of the prospective inhabitants by parks, playgrounds, and centers of amusements, while the development of æsthetic sensibility is fostered by sweeping boulevards, isolated dwellings, ample space for private parking, effective planting and reasonable vistas with dignified positions for important buildings, the business portions being located comfortably adjacent to the transportation facilities.

The arrangement of the individual houses upon their respective lots as suggested by the plan on page 98 is worthy of note as fundamentally different from that indicated by the plans on pages 11, 17, and 21.

It is pleasant to refer to the plan placed first, for its composition is happy and justified by analysis. The author shows thoughtful and keen appreciation of æsthetic values and holds charm and tranquillity to be as valuable assets as the successful arrangement of the more dominant parts of the composition.

The massing of the population on the outer portion of the plan, leaving the heart or the most accessible portion for the parks, for recreation, and for points of gathering is a measure of practical wisdom.

The solution is happily free from cul-de-sacs, which block air circulation as thoroughly as they do that of traffic and which are defective in regard to policing,

fire, handling of mobs, etc. It is also free from endless straight streets with their eddying drafts.

The arrangement of the "Place A" is most happy with its simple and unexpected naïve quality—formal but not too impressive, free from the colossal stupidity of the many civic centers which are being foisted upon American cities—lacking in imagination and full of monotony. The "Place A" of the present plan has in it the joy that abounds in the plaza at Venice and is capable of a diversified development. Its latent charms could be easily realized under favorable conditions.

There seems no reason why an added charm should not have been included by developing some of the short roadways by turns or sweeps of intimate character instead of nearly always adhering to the straight road, although the well defined sweeping boulevard might seem sufficient.

One could wish that some definite focal point of interest had been added to the composition, for it seems to lack this accent of building or monument, supported by adequate surroundings, and providing an element of formal dignity.

This plan includes many of the ideals which make for efficiency and shows the possibility of creating a section in which the development of the "Young American" may go forward under favorable conditions, due at least in part to the restraint which association with objects of fine sentiment exercises and the refining influence which comes from seeing the common things of life made beautiful. These opportunities are at hand, for architecture in America is equal to that being created in any other country and the æsthetic quality of the American home is equal to that of homes in other lands.

The lack of unity and the general ugliness of the typical American urban or suburban residence district is largely due to the lack of a single or composite controlling intelligence. The principle seems established that an area to be improved for residence purposes develops best when all building operations are controlled by an individual, corporation, or board. Better scientific, æsthetic and economic results are thus produced than when the building operations are handled by individual owners. Cheapness and ease of construction are also thus secured by eliminating the middle man, his profits, and his discordant views; and by grouping the units erected upon small lots, effects are obtained that otherwise would be impossible.

In analyzing a plan for a single quarter-section such as that presented it is difficult not to consider its relations to the whole city of which it forms an integral part and the effect which would result if this unit were to be repeated as a successful solution.

The necessity of main arteries connecting the section with the heart of the city is apparent, but the planning of these is not involved in this problem.

It must be confessed that one views these solutions, charming as they may be, with some apprehension, when confronted with the difficulty of protecting a community with such regulations that the original charm of the plan may not be lost sight of or be destroyed in the years to come by the individual who wishes to express American freedom of individual action by altering his own particular holding, thereby marring the effect as a whole.

In reviewing the collected plans one feels that the City Club of Chicago is to be

congratulated upon securing so many from which to draw comparisons by which progress in the development of the idea is made possible. It is also to be congratulated on its endeavor to place before the public in intelligible form this data upon a subject of such vital importance to our rapidly developing country.

ÆSTHETIC REVIEW OF THE PLANS

By Albert Kelsey, F. A. I. A.
Chief of the Division of Municipal Improvements, Louisiana Purchase Exposition

IN complying with the request that I should review, from an æsthetic point of view, the valuable and interesting set of drawings submitted in the competition for the planning of a quarter-section, instituted by the City Club of Chicago, I take pleasure, first of all, in endorsing the findings of the jury.

It seems to me that the consideration which should control the laying out of this tract must be architectural—architectural not only with regard to buildings, but architectural with regard to the arrangement of streets and squares, and the character and arrangement of the planting as well.

The elements of the problem are circulation, hygiene, and beauty.

Circulation, that is, the arterial system with its parkings, sewers, pipes, wires, street-fixtures, etc., is of first importance—hygiene, or the general salubrity of the tract comes next. Beauty, or the pleasurable appearance of the tract comes last, but not least, in that it represents the harmonious blending of those features which rise from the plan with the plan itself. Thus the plan and its developments are one and inseparable, and moreover in an intensive problem of this kind where housing is the main consideration, the design is manifestly an architectural problem from start to finish; though the architect, I gladly admit, requires the invaluable collaboration of an engineer and a landscape architect just as he requires the invaluable collaboration of a mechanical engineer and a heating expert in the designing of an office building.

The designs as a group seem to indicate that the competitors understand that long, narrow lots form an undesirable and wasteful distribution of property; that instead of long, monotonous, wind-swept arteries, curving streets arranged to discourage heavy, direct, through traffic are the quietest and most home-like; and lastly, that certain free open spaces are essential for recreation, ventilation and artistic effect.

I have been compelled, in the interests of fairness, to dwell upon the central idea conveyed by each plan almost to the exclusion of supplemental drawings, believing that the plan indicates possibilities far better than merely embryonic pictures.

In the first prize design, by Mr. Bernhard, it is interesting to note that he, like many of the competitors, has felt that each side of the quarter-section should be tied in intimately with the adjoining arterial system and should not be treated like a detached and isolated unit nor like a complete and self-sufficient city. Examining his plan in detail I find that he has linked many of his streets to adjoining city thoroughfares with simplicity and directness, while his monumental approach is not intended to produce a stupendous effect, though it gives ample emphasis to the tract, which to be sure is but one of many units entering into the composition of a great city. The one loop, circling through and bisecting lesser thoroughfares, is quite sufficient to give easy access to all quarters, to individualize the district, and to create pleasant, ever-changing perspectives. The manner in which he has compacted population at the strategic point, adjacent to the intersection of the loop and his monumental approach, thus providing for the maximum

number of families without spreading over too much ground, shows imagination and a desire to create something big, interesting, and picturesque. Likewise the manner in which he has provided for ever increasing openness and quietness in the center of the model quarter-section is good beyond praise. Considered only from an æsthetic point of view, this openness in conjunction with the densely built up quarter must provide an agreeable contrast, not unlike the one actually executed at Forest Hills Garden, Long Island, where those residing in lofty flats enjoy a view of the cottage garden arrangement near by and, conversely, those living in cottages with gardens may delight their eyes gazing at the totally different, lofty and picturesque sky-line opposite.

In general, there is a happy suggestion of having tried to provide a means of friendly, social, neighborly intercourse which is distinctly American and therefore, to my mind, in agreeable contrast to the suggestions of restraint presented by that official type of academic stage-setting which is so popular in continental Europe, where a paternalistic formality so often dominates the character and development of a neighborhood. He has been governed by local conditions.

Unfortunately his general perspective as well as his detailed illustrations do not adequately represent the possibilities of his most excellent plan. Also, as in all the other submissions, his does not make the most of the possibilities of tree planting, which is the more noticeable after having provided so well for varied and attractive types of housing. But as a whole, the layout shows such knowledge as to the unifying and individualizing of the architecture, massing and grouping of buildings, and the separating and placing of different types of construction, as to suggest that with further study and careful execution only a most charming settlement could result. The locating of public and semi-public buildings is good, while the idea of quiet, restricted parks in the center of many of his residential blocks would undoubtedly prove exceedingly popular.

Although he does not recommend the indefinite multiplication of his scheme, I have a feeling that it might nevertheless be alternated with one or two other schemes, to the general physical, artistic, and social betterment of more than one growing district in more than one great city.

The second prize design, by Mr. Comey, is simple and sensible. It has one advantage over the first prize design in its application to officially projected gridiron plans; and that is, that it provides for the diagonal circulation (if only in one direction) our cities so generally need. The scheme is economical and compact. The social center is distinctly good. But his division of private parcels of property into fairly long, narrow lots, abutting upon other fairly long and narrow lots is poor, as it provides many uninviting back-yard vistas. The diagram showing sections of different types of street subdivisions is interesting though neither imaginative nor complete. Of this I shall have something to say in my summing up.

Æsthetically the social or civic center offers fine possibilities, but as a whole the scheme is monotonous and a little too businesslike; though the designer should be praised for establishing an interior as well as an exterior building line, even though he does not suggest any means of taking advantage, æsthetically, of the fine open spaces he has been at such pains to protect.

The third prize design, by Mr. and Mrs. Lilienberg, fuses well with the arterial sys-

tem of the adjoining city; provides a double diagonal interior circulation and a fine center for public buildings and recreation spaces; while its solid rows of buildings on the outer streets wall off the outside world and its distracting noise and ugliness to the immense advantage of property in the center, toward which all street vistas have been focused upon interesting terminal points. The four corner entrances to the quarter-section are most inviting and the alternation of wooded streets and streets without trees is good, though far from original. All in all it is a design capable of considerable artistic development, even though it has not been graced with a single curved thoroughfare.

Messrs. Anderson's and Reecer's design is bisected rather brutally. The circulation throughout is a little too direct to insure that quiet and semi-isolation which is always desirable in a residential neighborhood. The linking up and grouping of houses suggests interesting architectural possibilities, though, as a whole, the design seems to scatter a good deal and is as lacking in variety as in architectural unity. The system of alleys for service use suggests forbidding fences, ugly corners and unsightly rubbish heaps; in fact, anything but pleasant outlooks.

Mr. Boynton's scheme seems a little fantastic, though it must be admitted the circulation is distinctly good; on the other hand, the amount of land given over to public areas seems out of all proportion to what is left for private use.

Messrs. Brazer's and Robb's design is not only fantastic but wantonly wasteful in its pretentiously un-American effort to create spectacular focal points. There is, however, a considerable amount of cleverness and skill displayed in the arrangement, as many features have been well "staged"; and, in consequence, the magnificent circulation is overwhelming, while many of the residential streets are, strange to say, nevertheless interesting and quiet. But all in all the design is a *tour-de-force* which does not show a serious understanding of actual social conditions.

The plan by Mr. Fixmer goes to the other extreme in its compact monotony and regular subdivision. It shows little knowledge of graceful and attractive city-making, but it will delight sordid real estate operators and be heartily approved by the average matter-of-fact city engineer. It is treated purely as an engineering problem and as such has merit.

The neighborhood unit plan with its civic sub-center, by Mr. Drummond, is interesting in its scheme of local community ownership and control of land. Some thought has been given to making the long interior courts quiet and beautiful. Architecturally the design shows independence of thought and attractive possibilities.

The streets on Mr. Lawrence's plan tie in with the adjoining quarter-sections in a manner deserving of serious consideration from an æsthetic as well as a practical point of view. Likewise the wide radius of his street corners is to be commended. I do not, however, like the way his playfields and courts are detached, hidden, and adorned with back yards when they might so easily have contributed to the openness of his plan, without losing much in privacy.

Mr. Pope's design, while a little wasteful in its distribution of land and fantastic in the grouping of houses, shows a welcome daring in venturing to suggest a main artery

widening out as it approaches the point of greatest interest and importance. Unfortunately the indication of his plan is far inferior to his perspective, indicating a fundamental weakness in design in that they do not agree. The diagonal grouping of buildings is wasteful but might be made very pleasing. Indeed it might prove a good way to trap the maximum amount of sunshine for each home and fully justify itself thereby.

There is something distinctly architectural, positive, and strong about Mr. Schuchardt's plan making it capable of attractive development. Though rather fantastic it is yet compact and businesslike. There is nothing rural or artificially countrified about it.

Mr. Tirell's design, while a little involved and weak in its indication of grouping the principal buildings, could easily be changed to produce a series of most attractive pictures.

Mr. Yeomans' scheme appears to me to be a little too rural in arrangement and not quite simple enough; in other words, most of his streets are not architectural, though his diagonal thoroughfare with its stores and offices in the center could be made very interesting architecturally. A row of trees down the middle of this shopping street would add verdure to the commercial center, without obscuring commercial signs or interfering with the circulation in front of the stores—a point which appeals strongly to the practical shop-keeper.

The rectangular scheme submitted *hors concours* without unsightly alleys, but holding somewhat to the established gridiron plan of Chicago with its small units, and especially with its strong emphasis laid on the flatness of the region in which it is supposed to be executed, appeals to me mightily in spite of the inconvenient arrangement of its arterial system, which is distinctly bad. But just as the lofty building is compelling, yearly, smaller and smaller subdivisions of city property in order that a single building may receive proper light and ventilation from all sides, so in semi-suburban residential districts, as suggested by this design, it seems to me that shorter and wider private lots, in smaller and smaller groups, offer many advantages. Also, as it is no longer thought expedient to place a house in the center of a property, because greater openness can be had by building semi-detached houses, spanning every other party line, or by building detached houses only a few feet from every other party line, so it seems to me that the author of this "quadruple block plan" design has brought out many points worthy of close study.

The decorative effect obtained by the use of connecting walls, arched streets, and the general striving for harmony displayed throughout, make me feel that if executed the work would not only be individual and artistic but distinctly appropriate if the arterial system were somewhat modified. The accompanying perspectives illustrate his intentions far better than those submitted by any other contributor, while the descriptive text comes from a thoughtful mind thoroughly familiar with the splendid effort bountiful Chicago is making, with such signal success, to better her physical and social conditions.

If I may make a suggestion or two in closing, which I venture to do, realizing full well that I shall exceed my prerogative as a reviewer by supplying ideas of my own, I wish to try to show that formal tree planting as an organic branch of city-making is architectural and somewhat of a science—something more than the mere dotting of curb

lines with shade trees. It must take into consideration those rules which insure maximum effects of scale, proportion, and perspective; and it has therefore seemed to me that, especially in an uninterestingly flat city and its suburbs, the tree arrangement as well as the kinds of trees to be planted under differing conditions and in different quarters to make a quarter-section somewhat picturesque, or stately, or interesting as the case may be, is a matter that might well be dwelt upon at length. To make my point clear I also contribute a single diagram illustrating what I am about to describe, which shows what an effect of width can be given to a narrow street, without widening the road-bed or increasing the width of the publicly owned area. Also attention is called to other advantages gained by planting shade trees on the inside of the sidewalk over the customary alignment on the outside of the sidewalk. Some of these are:

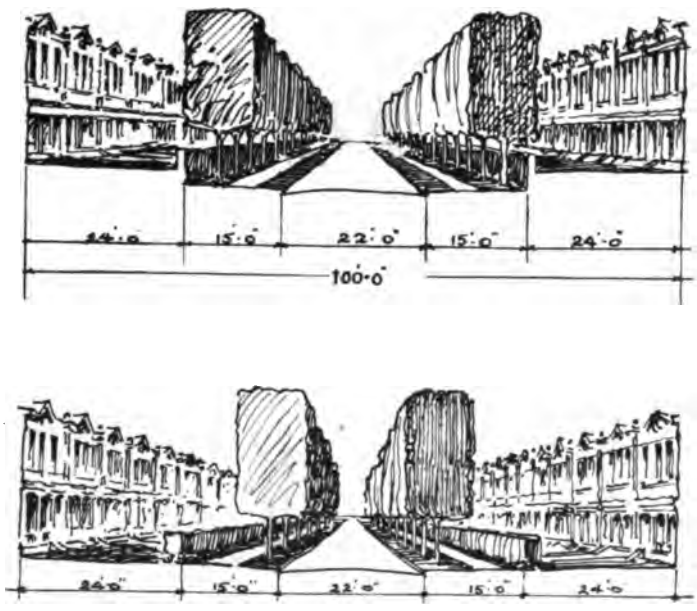
First (and to recapitulate so as to make the summary complete), the street perspective is vastly improved.

Second, the trees themselves have a better chance for their root system to breathe and spread.

Third, the lighting fixtures, fire plugs, etc., stand free and therefore perform their functions better; and

Fourth, by leaving the road lawn free and unobstructed there is thus provided an accessible space for underground construction—pipes, wire ducts, etc.,—an arrangement calculated to minimize the amount of necessary and costly cutting through the road-bed when new underground systems are installed or when repairs to them have to be made, thus leaving vehicular traffic at such times virtually uninterrupted.

It is evident this arrangement does not adapt itself to streets bordered with shallow yards, but it is only intended for the better neighborhoods; and thus, automatically, variety in street foliage, perspective and scale takes place. In short, the designer should not be content merely to vary his plan by laying out streets and spaces of differing widths and differing subdivisions, but he should so space his trees, and so select them for height and spread and character, as to supplement and heighten every variation in the plan itself. Indeed, the trees should be considered as an important and integral part of the plan; and, unfortunately, in this competition they have not been given that thoughtful and serious consideration which their immense potentiality in redeeming a level tract of land demands.



BOTH ARE THE SAME WIDTH. WHICH IS THE BETTER?

In my diagram I have suggested another thought, and that is to use the cellar diggings from houses on both sides of the street to form terraced,

walled gardens, insuring some degree of privacy to their owners, while breaking up the dead level monotony of the neighborhood. But this, like other thoughts, such as a general color scheme, the systematic arrangement of shrubbery and flowers, the architectural character of every unit from sidewalks to lighting standards and from a mere shelter to a monumental building, and especially the necessity for many protective restrictions, would far exceed the space at my disposal.

ÆSTHETIC REVIEW OF THE PLANS

By IRVING K. POND

IMMEDIATELY upon undertaking to review such a proposition as is presented in various of its phases by the contributors to this volume, and indeed, upon reading the program, one is conscious of two distinct aspects of the problem. In presenting these different aspects this particular problem is not unique among many or all of the other problems which confront one. Everywhere the earnest student of life is presented with the ideal—that which is possible of achievement or accomplishment only in an exalted state of being and environment, and the existing fact which has grown up out of material conditions, influenced and directed in many cases, possibly, by an ideal. It is almost safe to assume that all outcome of human effort which now exists as fact has at some time been influenced by an idealism on the part of its projectors or constructors; otherwise one can hold no faith in mankind nor hope in the destiny of the race. I speak of the idealism of projectors and constructors; but in viewing a sequence of related facts or material accomplishments one is struck with the part which habit has played in the ultimate development and conservation. Habit operating without knowledge or understanding of the underlying motive for action or mainspring of accomplishment is one of the greatest forces against which the idealist, or for that matter the realist, has to contend. But when one would depart from the line of existing tendencies one should be sure that one has full understanding of the source of those tendencies and a knowledge of the direction in which the stream is flowing. This broad generalization has its specific applications to the problem in hand.

Were the problem purely abstract, that is, one divorced from certain given and fixed surroundings, an ideal solution would be highly desirable as giving future workers in the field inspiration and aid not only in developing a given territory but in shaping the surrounding conditions to the end of a consistent and unified whole. But the program calls for suggestions for the development of a quarter-section of land located at a point within easy access of the "loop district" in the city of Chicago. This for once and all removes the general problem from the realm of the purely ideal and almost from any idealistic treatment whatsoever; for the district to be developed is bordered at present on two sides by surface lines of transportation giving a point of intersection and transfer, with the probability that soon the other two sides will be similarly bordered, giving transfer points—with their consequent noise, bustle and confusion at the four corners of the district. Besides this there exists in the surrounding territory a system of streets to which the thoroughfares within the quarter-section must "tie up" logically and reasonably that the development shall not be a misfit but shall be integrally a part of the whole. An ideal city will function perfectly in its plan and arrangement, and a community or locality to approach the ideal must assist in this functioning. A local development cannot be a thing apart and wholly unto itself and be morally or beautifully or functionally part of a larger organism, and unless it be all this it has no place in a modern city. What follows? It follows that any plan based on anything like an ideal premise will be capable of duplication or would fit in with any other scheme or schemes similarly

conceived. Apply this test to the three prize designs in this competition. The three realized in conjunction would form an impossible combination for a unified city. From the first it is not possible to form a consistent double unit,—the second and third more nearly meet the conditions, but both fail in fundamental particulars. Number two creates a diagonal thoroughfare which should be basic in the greater city plan but which is an undesirable local feature. It would tend to confuse, as number three by another arrangement purposely does confuse, zones of activity with zones of repose, arteries of business with points of social intercourse.

The distinction between fields of activity or of force and zones of quiet or of repose should be clearly marked and rigorously adhered to. This is fundamental to the function and beauty of plan as well as of design. Night and day, sleeping and waking, action and repose are ordained by nature and cannot be ignored in art. Along arteries of transportation and main traveled thoroughfares, places for business, the marts, the shows, fields for noisy sports, and accommodations for all the restless activities of the community should be disposed. In the quiet zones should be the churches, schools, children's playgrounds, the clubs, libraries, the galleries, the residences, the centers of social intercourse. The tenement should be upon the park and not upon the noisy street. In a really civilized environment there will be no noisy streets—but for a considerable period of time they will have to be reckoned with.

Definite contrasts, as between night and day, zones of activity and of repose, are demanded in other phases of the expression of nature as well as of human nature. Our cities generally have grown up on the rectangular or gridiron plan regardless of whether they were located upon the hillside or on the plain. Both hill and plain repudiate the gridiron; the hill because of its impracticability and its brutality if it is made practicable; the plain because of the monotony of the uninterrupted vistas echoing in a way the essential nature of the plain. Nature craves variety, not monotony or continued reiteration. The tree in the plain is a welcome object; it interrupts the sweep of the vision. A building at the head of a street or at an offset in the street would do the same; hence short diagonals for convenience and variety and offsets to close vistas are craved by the plain and sensitive dwellers thereon. The curved street as used in a number of the plans in this competition suggests contours; that is, that the curved streets are winding up around a hill to secure easy gradients. This feature not only is appropriate to but is demanded by the hill, but used as a dominant motive or a prominent feature it is inappropriate to the plain. The meandering walks and driveways of the parks will echo sufficiently the meandering streams of the prairie. It is unnecessary to magnify them into city dimensions. In the first and second prize designs the curve has been used in commendable moderation. Diagonals furnish the needed variety and give character and strength to the third prize design. For convenience in transportation and orienting oneself the gridiron plan with main diagonal arteries traversing it is most effective in level districts. The pattern made by some of the plans submitted, especially when the unit is multiplied, would possibly be very attractive to some leisurely sky-traveler, but would result in confusing the pedestrian not altogether at home with their intricacies.

A plan dominated by curved streets will produce the effect of monotony as surely as will a gridiron, and will engender a distinct spirit of restlessness. A plan which func-

tions perfectly for use and convenience will admit of, but unfortunately will not compel, a beautiful expression in elevation and perspective. It is not altogether the fault of various of the plans submitted that one finds no expression in elevation which is in any manner above the common place. Outside of the first prize design, there is none which strikes a note of distinction, and this design fails mainly in its suggested heaviness which is of an alien type and not adapted to an American domestic community. This competition should have brought out a richer expression of the æsthetic phase, a more poetical interplay of vertical motives and curves to atone for the level monotony of the plain.

At least three of the plans contributed represent the thought of the self-styled American school. The sociological error underlying these designs inheres in the idea that it is possible to compass the great, varied, pulsing American spirit within the bounds, and the extremely narrow bounds, of a purely local and individual expression. The fundamental psychological error underlying these plans lies not so much in the use of the gridiron plan as in the expression of this plan in a gridiron of three dimensions. The plain and the sensitive dwellers thereon repudiate this multiplication of irreconcilable monotony and call for the note of aspiration here and there, the dominant vertical line, and the poetical and contrasting curve. It were ungracious, even were it moral, to force the free American spirit to dwell in a depressed and depressing cubiform environment.

The planting of trees along thoroughfares and in public spaces might have received closer attention than it has in any of the schemes presented. Where tenements and residences are made to border lines of transportation the conditions might well be ameliorated by wide parkings and plantings. These natural forms are needed for variety and contrast just as much as are curves, and zones of quiet among straight lines, and fields of activity. The curse of our American cities has been the narrow street with its necessary elimination of parkings and plantings—the growing living element—and an absolute domination by the artificial and dead forms of a lifeless art. This condition is to exist, however, till the sap of life begins to surge through us; till the knowledge and desire for functional beauty, the keen quest of vital culture, the outpouring of the individual and the community in rich, bountiful altruism, and the will and power to express the spirit in terms of living form are inseparable and fundamental factors in our American idealism.

SOCIOLOGICAL REVIEW OF THE PLANS

By CAROL ARONOVICI, PH.D.
Director Bureau for Social Research of Philadelphia and Lecturer on Housing and Town Planning at the University of Pennsylvania

THE plans contained in this volume represent a mass of such varied and controversial sociological ideas and ideals that it is impossible, quite as much as it is unnecessary, to deal with them in detail within the limits of this discussion. All we can hope to do is to present a more or less personal point of view of the social requirements of the plans, and indicate in what manner and to what extent this point of view found expression in the plans submitted.

The paramount question from the sociological point of view in the planning of a specific section within the precincts of a developed community, is the relation that such a development should bear to the surrounding territory as expressed in the street layout, the civic and community centers, the business buildings and the relation of the business centers to the distribution of the homes, the parkways and other similar town planning problems. In these respects we have endeavored to analyze the plans before us, remembering that social and economic problems are constantly overlapping and that a clear line of cleavage between these two classes of problems is difficult to draw.

RELATION OF DEVELOPMENT TO THE CITY

The street layout, the location of public buildings, parks, playgrounds and all other public and semi-public structures and spaces in the development of a specific area in an intensely urbanized community must be determined by the relationship that this area is intended to bear to the whole. In other words, the dominant factor in determining the fundamental principles of the plan will depend upon the question as to whether the development of the area should be carried out as an independent entity connected with the surrounding territory only where necessity demands, or whether the entire section is to fit into the plan of the city and must be differentiated from it only in the better character of the buildings, the more extensive provision for open and play spaces, and a more general recognition of the social needs of the people.

In the present competition both points of view have found ample expression. A few of the plans have compromised on certain needs for individuality and isolation, while making ample provision for easy access and through traffic while the privacy of residential and social section of the development have been respected.

The advantage of isolating the major portion of such a community from the rush, noise, and dirt of the average city conditions cannot be denied. The providing of direct and through streets at one or two important points, however, must be recognized as an economic and social necessity in a large city. Whether this main thoroughfare is to be directly connected with an existing thoroughfare in the adjoining sections or whether it is to be placed at points which would make access to trolley lines and marketing centers most convenient, is a matter of expediency that should be determined by actual study of surrounding property. The winners of the first and third prizes met the exigencies of the local condition by two distinct methods. The former employed a more or less informal method while the latter used the diagonal system which may, in some

respects have the advantage over the other in point of service, but devotes too large a street length to this purpose when we consider the fact that contact with the outside section, while desirable, should be limited to the lowest point consistent with efficient services.

In several of the plans the attempt to compromise between a direct thoroughfare and the exclusion of as much traffic as possible has resulted in a street development that would tend to muddle rather than to direct traffic.

SOCIAL ASPECTS OF A STREET LAYOUT

Realizing that the street system is the skeleton upon which the efficiency of the whole development depends, it is necessary to base a considerable portion of our discussion upon this main feature,

An examination of the plans shows that the gridiron system was almost invariably abandoned for other methods of street treatment. That the effect upon the people resulting from the monotony of the straight streets lined with houses without architectural character is a social problem worth consideration is easily realized by anyone familiar with American communities. The reaction against the gridiron system was especially emphasized by one of the competitors who went so far as to recommend "narrow curved streets so that the owner may enjoy the charm of apparently meandering streets." What the social effect of this artificial and radical departure will be in the future, only experience can teach us.

LOCATION OF PUBLIC AND SEMI-PUBLIC BUILDINGS

The confusion that existed in the minds of some of the competitors regarding the social functions of main thoroughfares was amply evidenced by the difference in treatment among the competitors. The prevalence of the idea regarding the use of the main thoroughfares as the logical centers for the concentration of social and business activities was especially striking. Whether there is any justification for centering all or a large share of the public buildings about a main thoroughfare and concentrating all the circulation of the people about a limited area is still an open question. Whatever our opinion in this respect, however, it is quite certain that if the public buildings devoted to the local business, government and recreation are to be concentrated, it is undoubtedly better to have them centered about a space that is not exposed to the indiscriminate traffic of the outside—a condition which would tend to create congestion at this point and bring in outside elements that may not be desirable for the best interests of the community. If concentration of public and semi-public buildings and spaces is to be effected, they should be located at a point that would, in so far as this is possible, keep outsiders away from the main portion of the section. If, on the other hand, use by outsiders is contemplated, the boundary streets should be made available for this purpose. Such an arrangement would also furnish imposing entrance points, which would give a foreground and setting to the rest of the section.

In some instances the location of public and semi-public buildings on the boundary streets presents a social advantage that should not be overlooked. The isolation of a community in which certain desirable conditions exist is conducive to a social exclusiveness and a minimizing of the relationships between the residents of diversified sections. It leads to a social snobbishness that is not desirable and hardly carries the

lesson of imitation of living conditions which a more intensive contact with the neighboring sections would produce. In the case of the buildings and recreational facilities for the smaller children, however, it might be necessary to locate and plan them so as to render their use inaccessible to outside elements, thereby avoiding the danger from the conditions existing in the adjoining sections.

As I understand it, the purpose of such a development is not merely the local and individual value that the residents would derive, but the lesson that the practical application of advanced city planning principles would teach as to the possibilities within our cities for infinitely better conditions under existing economic standards.

On the whole, however, the writer is opposed to an indiscriminate and unspecialized concentration of public and semi-public buildings whether they be devoted to recreation, government, education or business. In the center of a great city or the plaza of a community as a unit, it may be found convenient to concentrate many structures at a point where they would be most easily found and where they would give expression to the civic pride of the people. In a small section, however, such as was involved in the competition, concentration of the civic structures and spaces is not necessary, but detrimental to the wholesome community life of the people. The mob spirit in amusement centers is an enemy of the home and of society. The concentration of recreational facilities at a single point intensifies the use or abuse of amusement facilities and the commercial values of such concentration are so great as to stimulate an undue effort on the part of those financially interested to detract from the home life and foster the street habit. If the homes are attractive and the spacing between the homes as well as their orientation is such as to make them comfortable both in summer and winter, the effort should be in the direction of increasing the home staying habit of both children and adults.

Civic centers may be encouraged in small sectional developments, but their character must be quite different from the more imposing civic centers of the community as a whole. An open vista with one important public or semi-public building, monument, band stand or any other ornamental structure located at a point where it would afford the best view and lend emphasis to the adjoining structures or open space is much more appropriate for a residential section than a concentration of large buildings wholly out of proportion to the home atmosphere which it is especially desirable to convey to such a development. These minor centers also assist in the distribution of the people and encourage definiteness of purpose among those seeking recreation in the public and semi-public buildings. This distribution of amusement and recreational facilities makes necessary a definite choice in the minds of the visitors and does not encourage the dilatory pleasure seeking which is so characteristic of the concentration of amusement centers. The problem of access to these various smaller centers is a minor one, since the distances under the most unfavorable conditions are hardly worth considering as a factor.

THE STREET IN RELATION TO THE HOME

The classification of street widths is more or less general in the plans and some of the competitors have made elaborate alley provisions. If the alley is to be considered as a minor street its value could not be questioned, as long as distances between building

lines are maintained in accordance with the needs of health, safety and comfort. When, however, competitors develop alley systems as secondary service streets, they are wasting valuable land and are creating conditions which may become a menace to the health and social safety of the people. In the case of apartment houses the increased traffic and the congestion of population may warrant secondary or service streets, but they should be used with discretion as they are bound to become a social menace without costly lighting and police supervision.

In a number of instances interior courts were provided and in at least one instance the interior court was made the architectural center of the block while the street was designed mainly as a means of access. Such a development represents a method of planning that is consistent with the apartment house or the individual dwelling which is under common management and care. It would not be suitable for individual ownership with divided responsibility, especially because of the isolation from the public view and common use. The street is a valuable stimulant in the maintenance of high standards in the outward appearance of the home and its surroundings.

Only one of the competitors used the open court method of grouping houses about a small plaza at the end of a street. No doubt the evils of the blind alley have had considerable to do with the hesitancy among competitors to use this method of street development. It must be conceded, however, that from the point of view of economy in land use and street maintenance and under normal social conditions this method is quite desirable, as it reduces outside traffic to a minimum and gives the largest amount of privacy.

Center street parking was used by competitors upon streets which were not intended to accommodate trolley lines. The main function of center street parking on a residence street is the deadening of noises and the proper orientation of traffic. Where this is not required, it is best to increase the spaces between the homes and the street curbing in order to confine the street traffic to the farthest possible point from the house.

The problems of street orientation for light and ventilation was considered by a number of competitors, but only in one instance has this consideration taken a scientific form.

The relation between the heights of the buildings, the amount of vegetation and the character of vegetation to be planted on the streets in order to obtain the best and quickest results seemed to have been generally overlooked.

LOCATION OF BUSINESS CENTER

From the economic point of view of the residents the problems of locating the stores, especially those that deal in the necessities of life, was variously dealt with in the plans, but the discussion was mainly one of *planning expediently* rather than of social economy. The location of stores in the center of a development such as the one proposed by the competition should be considered in the light of the prices that generally prevail under such conditions of exclusive trade. By locating the stores at a point where they would have to meet the competition of stores in the adjoining territory a balance of prices could be maintained. Co-operative stores and co-operative purchasing would, of course,

meet this contingency, but the probabilities for such methods of balancing prices of commodities are not sufficient to determine the location of the stores within the territory planned. The litter, dust and noise of the business street is hardly a necessity in a community which endeavors to provide ideal home conditions, and the enhancement of land values which would be produced by the presence of such business structures would hardly be helpful in maintaining a normal home community with ample spaces and low rental values.

RECREATIONAL FACILITIES

One social fact seems to have become generally accepted by all the competitors; namely, the necessity for adequate recreational and play facilities. In some instances a limited number of large playgrounds and a great variety of social buildings are provided, while in other cases the reverse is true. There is no plan, however, which provides for a play and recreational system consistent with the needs of the population to be accommodated on the area assigned for the competition on a basis that could be expressed in definite statistical terms. In one plan, for example, we find six large playgrounds with extensive provisions for interior gardens intended to be used in common by a number of families, but no mention is made of the probable number of children who might use these playgrounds. In other cases a large number of interior court playgrounds are provided without designating the population of an age suitable for the use of these small private areas.

If one were to select the weakest aspect of the entire mass of plans submitted in the competition, that of adequacy or inadequacy of the recreational facilities would stand out as the most apparent failure. This is due to the fact that the competitors did not have available accurate data upon which to judge of the needs of such a population as they proposed to house, although they were greatly impressed with the idea of the need for such facilities.

If the population in the section planned is to be determined by a fixed type of house with presumably a more or less limited capacity the calculation of the needed recreational spaces and buildings should not be a difficult problem. It is a well-known fact that there is almost as much danger in providing recreational facilities beyond the needs of a community as there is in failure to make adequate provisions. Playgrounds without adequate equipment and supervision have a low social value, and an excess of permanent provisions might prove financially burdensome to the community.

A surprising failure to co-ordinate playground needs with playground provisions is to be found in the fact that some competitors placed interior play spaces in the blocks designated for small dwellings, and in the general failure to make such provision in the blocks allotted to apartment buildings and where the need for play space is greatest.

The private playground for small groups of homes has an alluring quality that has had its effect upon a number of the competitors. When, however, we consider the fact that dangerous and unnecessary traffic is to be excluded from the community and that proper play supervision is to be made available, the need for such private playgrounds does not seem so great. The common use with the divided responsibility in the case of such play spaces and the practical impossibility of providing adequate supervision for such a large number of play spaces as this system creates, makes them impracti-

cable for a development in which people of moderate means are to make their homes. An examination of some of the plans in which interior playgrounds are provided shows some of these spaces to be of shapes and sizes that render them practically useless for the purposes for which they are intended.

The location of play spaces in central and conspicuous sections of the development characterizes a number of the plans. In the cases where the playgrounds form the background or the foreground of social centers or other public buildings and where the architectural value of these structures warrant display, their central location is not objectionable. The playground in itself, however, is not a desirable objective point for a main thoroughfare. This is especially true of the smaller areas which should be afforded the greatest amount of privacy and protection against exposure to heavy traffic streets. Spontaniety is a valuable asset in efficient play. Self-consciousness destroys spontaniety. Exposure to the public gaze in playgrounds located in traffic centers is bound to foster self-consciousness and desire for display.

ALLOTMENT GARDENS

The English idea of the allotment garden seems to have impressed several of the competitors. In a highly urbanized community with greatly diversified needs, social make-up, and high land values, the allotment garden has no place. The distribution of these spaces inside the building blocks would raise problems of use and care that are inconsistent with the practices prevailing in our cities. If gardens are to be provided they should be placed in one locality and their use adapted to the demands for gardening, but not without the possibility of using the land for play or park purposes if necessity should demand it.

The whole question of "shut-in spaces," whether they be parks, playgrounds or allotment gardens, is one that should be carefully weighed. The line of cleavage between public and private ownership, between public and private maintenance, should be sharply drawn. While I am heartily in favor of extending the bounds of public ownership, I am opposed to common ownership that is not coupled with public responsibility; it is bound to endanger its efficiency in serving the best interests of the people.

A general consideration of the plans contained in the present volume reveals the striking fact that all those who took part in the competitions were conscious of the social significance of the development. While boulevards, greatly out of proportion to the area considered, and monumental buildings too costly for the population involved were suggested, practically all the schemes submitted were fundamentally based upon human principles of privacy, comfort, and sanitation.

The fundamental error in most of the plans is to be found, not in the failure of the competitors to make sufficiently varied provisions for the social life of the people, but in a failure to gauge the size and location of these provisions.

Perhaps this was due to the manner in which the announcement of the competition was made, but efficient community planning requires a certain amount of social mathematics without which costly and lasting errors are bound to occur.

ECONOMIC REVIEW OF THE PLANS

Some Economic Tests and their Application to the Competitive Plans*

By ROBERT ANDERSON POPE

IN a design for a residential suburb such as the City Club provided for in the program of its competition, the economic value is the primary and vital test of practical worth; for, unless a design is economically feasible, it can never be successfully executed on the basis of its own merits. We must conclude, therefore, that in determining the relative merits of the plans submitted the "economic yardstick" must be the first standard of measurement applied. All other standards as to social and æsthetic advantages (apart from their economic phases) must be applied secondarily.

There are three principal factors that go to the making up of the economic value of a design for a residential area such as the quarter-section in question. These are:

1. Intensity of land development.
2. Distribution of community objectives.
3. Street system.

1. Intensity of Land Development

By this we mean the number of lots or house sites that have been provided for in a plan. The maximum economic return does not necessarily result from the maximum or from the minimum number of sites into which the area may be divided, but rather from the maximum number that can be economically provided with the greatest possible community and individual advantages.

Thus intensity of development may be obtained in part by the use of a very large percentage of land in street area, which in a residential area is an economic disadvantage on account of the large extra cost in the development and maintenance, for which no commensurate return is secured.

2. Distribution of Community Facilities

Every residential community should, wherever possible, be provided with the following facilities:

Commercial (shops, markets, etc.).
Educational (schools, libraries, etc.).
Recreation (playgrounds, parks, theaters, gymnasium, etc.).
Social (churches, public halls, etc.).

Proper location of such facilities will materially increase the value of the neighboring properties; but, since there is a definite limit to such possible increase of value, especially in a residential area, concentration of these community facilities in a limited space would fail to produce the maximum land value for the entire community. Therefore, the problem is to determine what distribution will produce the greatest economic benefit for the community as a whole.

*For tabulated data to accompany this review see pp. 134-138.

3. Street Systems—Direction and Location of Highways with Reference To:
   (*a*) External and internal objectives.
   (*b*) Encouragement or discouragement of through traffic.
   (*c*) Convenience of internal communication.
   (*d*) Street section design.

(*a*) In the quarter-section now under consideration, the only given external objectives are the two car lines on two sides of the property, the intersection of which lies towards Chicago, and furnishes the principal external focal point. The street system that brings the most lots within the shortest time radius of these car lines and their point of intersection would create the maximum land value, so far as this feature is concerned.

Internally, that street system would be the most economic which locates the internal objectives, such as the facilities previously enumerated, within the minimum time radius for the largest number of house sites.

(*b*) As a general rule, a through thoroughfare is a detriment to land values in an area restricted to residential purposes. For such a thoroughfare means waste of land through extra width necessary for the greater traffic; additional expense through cost of construction and maintenance of this extra width; loss caused by noise, dust, and danger from the unnecessary traffic invited by such through thoroughfare; and it also entails the loss of seclusion and privacy, and that sense of entity which has such a definite and economic value in a residential community. On the other hand, prevention of through traffic insures unity in the property, together with quietness and privacy to the individual homes.

For these reasons, a street system designed to restrict traffic solely to the needs of the community itself will prove, indisputably, of greater economic value.

(*c*) Further, a street system so arranged as to make all its parts most conveniently inter-accessible, will produce, in this respect, the highest economic land value.

(*d*) The measurement of traffic requirements is one of the vitally important economic problems that this competition has indirectly called for a discussion of, and logically comes up after the design has insured the maximum convenience as to the *direction* of the internal traffic of the community, while at the same time having provided the same convenience of direction for the use of the external traffic serving the area in question. Then the problem becomes one of accurately measuring the traffic needs as to the street *section design* of each street and of the street system as a whole. Having accomplished this measurement of traffic needs, the street section design should be entirely based upon the results determined by the measurement of these traffic needs. In this way and *only* in this way will it be possible to determine the most economic street sections. Any other procedure is certain to result in either the usually adopted wastefully excessive amount of improved road surface (a result which is always secured at the expense either of the possible planting area, or of the size of the sites of the individual plots), or in an uneconomic deficiency in the amount of improved road surface which means of course a resulting uneconomic congestion of traffic. It is evident after a study of the competitive plans that not more than three, probably only two competitors have taken any account of this vitally important aspect of the problem. It might be

said in their behalf, however, that the time which the competitors could afford to give to the work of the competition may account for the ignoring of this phase of the problem. Since, however, the street section problem has been so generally disregarded by the competitors, I have omitted the specific discussion of the plans from this standpoint.

It should be noted here that, in considering the computations as to the cost of the various competitive designs, it must be borne in mind that the greatest economic value is not necessarily resultant from the greatest or from the least expenditure, but rather from expenditure which will produce the most permanent value for the least financial outlay. For this reason, and because of the impossibility of briefly comparing plans which differ so widely in the emphasis they place upon the various functions of a residential community, we have only partially used cost comparisons in this review. Complete cost data, however, have been furnished in the appended tables for those who care to study more closely the relative costs of the designs. (See pp. 134-138.)

The application of the foregoing economical tests in measuring the probable hypothetical values created by each of the competing designs brings us to the following conclusions:

Plan No. 1, by Wilhelm Bernhard

This plan has secured 1267 sites of an average individual dimension of 28 x 100, without any very serious sacrifice of other essential advantages, although part of this intensity of development is due to long rows of attached houses, together with many houses not attached but undesirably close to one another, restricting their outlook to front and rear.

This perhaps could have been avoided had a lesser area been assigned to public use, and to private "interior parks."

A glance at plan No 1 immediately discloses the fact that the community objectives are located largely in the lower central portion of the quarter-section, thus creating a high degree of concentration of interest — considerably at the expense of the upper portion of the design. While it is true that a certain degree of concentration of these units makes for efficiency and interest, a wiser distribution of them than is shown in this design would probably mean a greater economic value to the community as a whole.

Were these facilities more centrally located, even if as concentrated as shown, greater land value would have been created in this plan.

As a minor consideration, it perhaps should be noted that the amount of land assigned to these community objectives, especially to the buildings, seems disproportionate to the needs, and particularly to the financial ability of a community of this type and size. It would seem, therefore, that the assigning of less area for public space and more for the individual houses (the provision of which is, after all, the primary object in a residential community) would have better proportioned the units of the development.

In the problem given, we must assume that the two car lines are of equal importance; therefore, the natural tendency of the population would be to travel in the shortest line possible towards the intersection of these car lines. Plan No. 1 does not permit this. Consequently, it seems to be artificially thwarting the natural economic tendency. One feels that the well-conceived arterial looped thoroughfare or avenue would have better served the community by having its ends rest upon the two car lines.

For the most part the plan is especially effective in permitting direct access to the two car lines.

The street system is somewhat disadvantageous because of the through traffic invited by two traffic streets in one direction and by three in another.

Plan No. 2, by Arthur C. Comey

Applying first the economic test of the intensity of land development we find that plan No. 2 has 1155 house sites, with a dimension of 37 x 100, which is approximately the average of all the designs submitted.

This in itself may be considered as a partial justification of the intensity of the development used. The combination of this number of house sites with the lot area used has been gotten chiefly at the expense of park and playground area, in which this plan is markedly deficient.

The house location of this plan has a commendable degree of openness, which is in part due to the well-advised use of the double house, since this makes the space between houses exactly twice what it would be were individual house sites preferred.

There are, however, too many attached family houses whose orientation involves a north exposure for many bedrooms. This is uneconomic, since a lower renting or selling value is entailed thereby. Therefore, in this respect, the method of land development is deficient. A considerable part of this intensity of development has been made possible by the adhering to the stereotyped city block plan at the expense of the individual plot while it is a question whether a much larger provision for community features and activity would not have resulted in a higher economic value, even though fewer house sites were provided.

As regards the distribution of community objectives Plan No. 2 deserves commendation, since the internal objectives are for the most part well distributed, tending to secure the largest total land value for the quarter-section. It is a question, however, whether the location of all the stores, instead of being partly located within the residential community, would not have been more economically placed on the noisy and less residentially valuable car-line thoroughfares, since stores located within residential areas are more apt to depress than increase land value. A location of the two churches in opposite parts of the property, rather than approximately contiguous, would have increased the total land value. Also, in a similar way, the library perhaps could have been located apart from the group of buildings shown, in such a manner as to have further added to the total land value of this property.

According to the standard assumed in our hypothesis, the main feature of the street system of this plan is distinctly unfortunate, since, because of its direction, it would become shortly a very much used thoroughfare, and would therefore practically have the effect of dividing the property into three parts — a most undesirable result considering the ideal is to create unity and a self-sufficient residential community. It should be noted, however, that save for the diagonal avenues, cross traffic has been fairly well discouraged, either from a north and south or from an east and west direction, which is an economically commendable feature. Regarding the convenience of access to the external objectives, i.e. the two car lines and their intersections, the street system provides specially well for this economically important feature, save in one instance, where a semi-marginal street near the southern limit of the quarter-section is not carried to the car line, as it undoubtedly should be.

Regarding the convenience of access to the internal objectives by means of the street system of Plan No. 2 — we find that these objectives are on the main thoroughfares, which are quite readily accessible from the less important roads; therefore, from this standpoint also this plan must be considered economically good.

A minor economic consideration should be noted, i.e. that a higher land value would probably have been secured if a less urban and more picturesque treatment had been devised.

Plan No. 3, by Alert Lilienberg and Mrs. Ingrid Lilienberg

The intensity of land development of Plan No. 3 is self-evident — it has the largest number of lots (1422) of any plan submitted; and at the same time it uses almost the smallest individual size of any, i.e., practically 25 x 100. It is believed that such an intense degree of development as here shown has been the cause of a very large and definite economic loss to our cities, and therefore such an arrangement must be considered as uneconomic, although it is granted that a larger immediate money return would probably be secured from such a design as this than from one less intensively developed; but, in the long run, the community loss is much greater than the gain from such intensively developed areas.

In this plan also, but in a much greater degree, the orientation of the attached house would create a direct economic loss, on account of the numerous houses having only a northern exposure, and would also create a large indirect loss resulting from the impaired efficiency of the inhabitants of such unhygienic homes. Again, such an intensity of development has to be accomplished, as is shown in this plan, by the

sacrifice of those community recreational and educational facilities which are such positive factors in creating the efficiency that goes hand in hand with health and happiness.

The effect of this community, designed in this manner, is entirely urban, and again, an economic loss is suffered through the failure to relieve the monotonous environment of the city proper.

Light and air are largely restricted in the houses of this plan to the front and rear exposures; thus a large part of the possible light and air has been sacrificed to intensity of development — a procedure which most certainly culminates in an economic loss to the community.

The community objectives of this plan are fairly well treated to create a large economic value. A still better result would have been secured had all the churches, rather than only one, been located within the property instead of on the margins, where they would increase the value of the external land almost as much as that of the property within the boundaries of this quarter-section. The major internal objectives, such as the field house, the athletic field, etc., etc., are placed economically to the most advantage.

In reference to accessibility of the main external objectives, i.e., the two car lines, we find that only about one-third of the property has direct communication with these objectives, while the farther away a plot is from these car lines the greater becomes the time radius from these car lines.

Since the economic ideal is to make the perpendicular distance from the house sites to these car lines as nearly as possible coincide with the time radius, in this respect the plan is economically deficient.

Plan No. 3 is more fortunate in the relation of its street system to its internal objectives with eight main arteries of the diagonals leading into the more important and centrally located community objectives. This makes these objectives approximately equidistant from all parts of the property. This is not accomplished, however, at the expense of too much external traffic into the property, or making too great a convenience for the passage of through traffic along these avenues. On the other hand, the complicated aspect of this street system prevents convenient communication between home sites and the minor community objectives. Therefore, it is not as economically advantageous as it might be.

We have discussed these first three plans at some length, because they were the prize-winners. The remaining plans are not discussed at such length, except in especially meritorious instances, in view of the fact that the method of the application of these economic factors will be clear, and can be, for the most part, readily applied by the reader.

Plan No. 4, by Riddle and Riddle

Although Plan No. 4 uses one of the largest lot units, i.e., approximately 50x100 feet, yet it secures nearly 1000 lots, but accomplishes this intensity of development by means of an extensive and consequently expensive amount of street area, also at the expense of a considerable percentage of the possible amount of light and sunshine, and the creation of a large number of unhygienic north exposures. Moreover, it provides an inadequate amount of park and playground space as determined by the maximum economic advantage.

The community objectives are well located, because of the equal convenience which their sites provide to all parts of the quarter-section. It is possible that the grouping of the shops around the square would be more of an advantage than would be the case were they located on the car lines, but this is doubtful, since the car-line location would be using sites less desirable for residential purposes, and much more desirable for business purposes.

The street system in this plan with respect to the external objectives — the car lines — is convenient for not more than one-half of the property. Since the part for which it is inconvenient is the most distant from the two car lines, this street system is especially disadvantageous economically.

In relation to the internal or community objectives, the highways make for almost the maximum possible convenience, but have the disadvantage of inviting a very large amount of through traffic, which is disadvantageous for a residential community.

Plan No. 5, by Albert Sturr

Plan No. 5 has an average lot unit of approximately 45 x 100 feet. This is fairly liberal, and yet 952 sites are secured. Considering the size of the unit, this number is a very intensive development. It is secured

partly by the use of interior courts, which although charming architectural units, are probably economically unsound, because of being confined to one direction of egress and ingress — an inconvenience not likely to be tolerated by the American public. The arrangement also is disadvantageous for the reason that it brings the rears of the houses too close together, although it does provide for a charming interior park, which would have a large economic value were it not for the inconvenience in the arrangement just mentioned.

The distribution of community objectives seems to be conceived in a manner to produce very nearly the maximum economic advantage. The stores on all corners, with the group of stores at the intersection of the car line, which is a most important external objective point, is certainly a correct principle. The location of the major interior objectives in a central position, equally convenient to all parts, is also well planned, as are the churches in opposite corners of the property.

The street system is especially good, from the standpoint of convenience to the two car lines, and quite as good with reference to the internal community objectives. From the standpoint, however, of through traffic, the system is unfortunate, as there are six through thoroughfares crossing the property in two directions — that would be exceedingly disadvantageous to a residential community from the economic standpoint.

Plan No. 6, by Robert Kingery

The intensity of land development in Plan No. 6 is secured through an expensive and wasteful street system, which yields no compensating advantages.

The community objectives, however, are conveniently located, while the street system provides for comparatively little through traffic, and a fair degree of convenience to external objectives.

Plan No. 7, by Edgar H. Lawrence

The high degree of intensity of this plan is shown by its 1224 lots, with their average dimensions of 37 x 100 feet, and is commendable, yet this intensity has been accomplished at the lowest cost of any of the plans submitted. It has not secured this result at the sacrifice of park and playground spaces, which are situated in such a way as to enhance land values very materially. The arrangement of houses secures for many the maximum possible exposures. Therefore, the intensity has not been achieved at the expense of sunlight and air.

The distribution of community objectives along the boundaries of the quarter-section is certainly desirable as far as the commercial units are concerned; but it is improbable that for an area of this size such a large percentage of community features would be economical. Therefore a location of these commercial objectives along the two car lines, instead of on all sides, would seem to be the better design.

It is especially good designing from an economic standpoint that the non-commercial community objectives are splendidly distributed to secure a high economic value.

The street system of this plan, from the standpoint of convenience to the external objectives or car lines, is only about one-third as efficient as the theoretical ideal which would project all blocks and streets perpendicular to the car line, were other considerations not more important. This point is the only major economic deficiency of this design.

From the standpoint of the convenience of reaching by this street system the interior objectives, we find a very high degree of efficiency, and therefore of economic worth.

Again, this design has accepted the definite hypothesis stated in the introduction, i.e., that the through thoroughfare is economically detrimental to a residential area — as this plan has only two streets that would have any tendency to invite cross traffic, and, even if invited, such traffic would be negligible on account of the extent of detour involved by the central public space — a detour which would, of course, be saved by the use of the thoroughfares flanking this quarter-section.

Plan No. 8, by Charles A. Tirrell

The intensity of development for Plan No. 8 is measured by the 1242 lots of an average dimension of 30 x 100 feet. The cost unit for this intensity was one of the lowest of any of the designs.

An examination of this plan shows that the intensity has not been secured at the economic expense of

the park and playground space, the distance between houses, or an excessive street system. It has, however, been in part secured by the use of the undesirable attached dwellings, and the consequent loss of a considerable percentage of the possible light and air, and the provision of a large number of houses with northern exposures for half of their bedrooms.

The distribution of community features in this plan is economically very satisfactory. They are distributed in a way which certainly tends to secure the maximum community value. The location of the stores at the intersection of the car lines is undoubtedly the most economic arrangement, since the prospective purchaser will find the site of these stores, no matter which car line is used, convenient both going to and coming back from the city.

The street system of this plan is economically very fortunate, since it is so designed as to enable residents to reach the car line with almost a maximum degree of convenience, and also to reach all the internal or community objectives with even a greater degree of facility. From the standpoint of discouragement of through traffic, this is decidedly one of the best plans submitted, as it would almost completely accomplish this end.

This plan is also ingenious and distinctive for several minor features — especially its picturesque, informally designed street system, which would form a very valuable psychological relief to the formal monotony of the city plan, and which would consequently have a considerable economic value.

The location of the central park is ideal, and seems to be very nearly of the size that would be most advantageous, and at the same time economically feasible.

Had this plan used a less intense development, combined with a more hygienic and æsthetic arrangement of houses, it would certainly have been one of the best designs, from the economic standpoint.

Plan No. 9, by G. C. Cone

This plan has an economic degree of intensity, the large cost of which does not provide commensurate advantages.

It has recognized the economic advantage of locating business at the intersections of the car lines. It has also well located centrally its community objectives.

Although its street system provides for an economic access to both the external and internal objectives, it does so at too great an expense of the through traffic, which it everywhere facilitates.

Plan No. 10, by Phelps Wyman

This plan shows its intensity of development by its 1060 lots of an average of 34 x 100 feet. This intensity is accomplished by the use of a large percentage of the multiple dwellings, and by the fact that they are placed in almost continuous rows. This is believed to be less economic than the same plan might be with a less intense development. It must be noted, however, that these rows are in most instances very much relieved by frequent setbacks, which considerably increase the amount of sun, light and air, which is such a large factor in determining the economic value of a house. It should also be noted that the intensity of development has been accomplished at a relative unit cost which is very high — amounting to almost 50 per cent more than the standard Chicago quarter-section. We find here also, as in many other plans, a large percentage of houses with due north exposures.

In the location of the community objectives, the schools' site and library are economically well chosen as are also the store conveniences on the four corners. It is probable, however, that the amount of space assigned to stores is greater than the needs of this community, and therefore uneconomic. As a whole, it must be considered that this plan is one of the best, from the standpoint of getting the maximum community value from the location of its public buildings and park.

The street system is exceptionally good, from the standpoint of convenience to objectives of the car lines and their point of intersection, facilitating almost the minimum time radius from all house sites to car lines.

Regarding convenience of internal communication to the main community objectives, this plan is again excellently arranged, since all these objectives are conveniently and simply reached from any point on the properties. An effort here seems to have been made with a considerable degree of success to pre-

vent through traffic, except for the diagonal thoroughfares — the central circular park would not prevent the creating of two diagonal thoroughfares, since the length of these avenues from corner to corner would still be materially left as the sum of the two sides of the quarter-section. Furthermore, a large congestion of through traffic would be likely to arise from time to time because of this circle and its intersecting thoroughfares. Such a result, it is self-evident, would be uneconomic.

Plan No. 12, by Anderson and Reecer

The intensity of development of Plan No. 12 is shown, in part, by the fact that it has 1072 house sites of an average dimension of 40 x 100 feet. A large part of the intensity of this plan is due to the use of a multiple house. This is very desirable economically, when oriented so as to avoid one exposure approximately due north, and to create as many exposures as possible which are due east and west. This broad rather than deep house avoids the use of dark interior rooms, and the skylight arrangement.

This plan has ignored the economic disadvantage of the multiple houses which are placed to give due northern exposures.

The intensity of this plan is also gotten at the expense of the economic advantages of park and playground spaces, which are decidedly too few.

A high economic value has also been secured by a well chosen location of community objectives. Here again the stores and business buildings are, as in many other designs, placed on the outside corners of the quarter-section.

The same question arises here as in other plans, as to whether or not stores are advantageously situated at any other corner than at the street car intersection.

The street system provides a commendable degree of accessibility to the car lines and their intersections, though probably at an undue expense in land and construction cost of the street system.

Regarding the convenience of access to the community features, it is for the most part direct and quick, and so achieves the economic efficiency desired.

Plan No. 13, by Louis H. Boynton

Plan No. 13 has the highest degree of intensity of development of any of the plans submitted, and, at the same time, has the largest lot unit. It has 1384 lots, of an average of 43 x 100 feet. This most commendable result seems to be largely accomplished by a great economy in street widths a method entailing few of the disadvantages of those plans which have a large number of house sites.

Except for the two boundary streets, there are no multiple dwellings — only a limited number of houses with northern exposures.

Neither is this intensity accomplished at a sacrifice of the amount of sun, light and air with which each house is provided, or by any suggestion of adherence to the monotonous standard development.

The result must be very highly commended because of the very large economic value that this intensity of development provides for with so very few detrimental features.

Attention should be called to the limited amount of park and playground space immediately adjoining the house site. Such playground spaces as there are are so well proportioned and designed as to create perhaps the largest economic value to the house sites so provided for.

The distribution of the community objectives seems somewhat too centralized to produce the greatest community land value.

The small circles in each quarter of the design would have been splendid points to use for location of community objectives, and would doubtless have increased the total economic advantage of the plan materially, had they been so used. This could have been done without withdrawing the theater, the assembly hall or the churches from the central area, where their æsthetic advantages are most economic.

The designer here has also concluded that the vantage point of the corners of this quarter-section is one most economic for the location of stores.

The street system of this plan is one of the most ingenious and commendable of any submitted, and perhaps would be ideal if it could be supplemented by effective traffic regulations, that would prevent the

use of the numerous diagonals as through thoroughfares. If this however, could not be accomplished, the scheme would be uneconomic from a residential standpoint.

The splendid relation which this system has to the abutting street system and the Chicago plan, though highly efficient from the municipal standpoint, facilitates all too readily entrance into the property from every direction.

As to the convenience of reaching the car-lines from all house sites, the street system is again most admirably arranged. In a similar way it reaches all of its interior objectives so simply and quickly. These advantages are extremely valuable, and tend to materially raise the economic value of the community as a whole.

Plan No. 14 by William H. Schuchardt

The intensity of development of this plan is accomplished at a cost of almost 50 per cent more than that of the standard Chicago quarter-sections.

It sacrifices the park and playground amenities to its house sites, in what seems to be an uneconomic manner. The distribution of its community objective is inadequate, being too centralized to produce the maximum land value. The store sites at the corners, however, are economically advantageous.

Although the street system provides a fairly comprehensible and simple means of reaching external and internal objectives, it is decidedly economically unfortunate because of its numerous cross thoroughfares.

Plan No. 15, by Morell and Nichols

The low intensity of the development of this plan is shown by the fact that it has only 777 house sites, although they average the liberal dimension of 50 x 100 feet. It is doubtful whether such a small number of sites can be economically used for the average Chicago families, where the cost of land must be considered. Further, in spite of this unintense development, the house sites are without anywhere near the amount of playground space which would be economically advantageous. They also have a large number of houses, with a northern exposure.

The distribution of the interior objectives is fairly well calculated to produce a large increase in land value. The store locations are certainly well chosen, and materially aid in producing a large total land value for the community.

The street system, except for the failure to extend one street to the car line, is almost perfectly arranged to assure the minimum time radius to these car lines from all house sites. This is one of the features that contribute so largely to creating the maximum land value.

Regarding the convenience of reaching internal objectives, the plan is not quite so fortunate, although it is very good except for two limited areas.

The plan is also fairly good from the standpoint of the discouragement of through traffic. Its chief effect lies, however, in having connected the diagonal avenue through the civic center with two bounding streets — this is certain to divert considerable traffic through the community.

Plan No. 16, by Charles H. Ramsdell

Plan No. 16 is almost negligible from an economic standpoint, since it only has 594 house sites; although it must be admitted that these are of liberal dimensions. The cost of land would make this development difficult for anywhere near the family of average circumstances in Chicago.

The park area is also uneconomic in its distribution and arrangement.

The distribution of the community features is very good, however, and tends to create the maximum land value from this source.

The street system is uneconomic, first, because of its excessive cost; secondly, because of its lack of simplicity.

The external objectives are only conveniently reached by part of the property, but the internal objectives are quite readily accessible. The whole plan would be likely to create a certain amount of through traffic, which is especially disadvantageous.

Plan No. 17, by Alfred B. Yeomans

Plan No. 17 has a high degree of intensity — 1341 lots, 22 x 100 feet. Although this lot unit is small it is probably much nearer what is economically feasible than that provided in nearly all of the other designs.

This intensity of development is not secured at the expense of the park and playground amenities, which is all the more economic and commendable. Perhaps, however, there is an economic loss through the failure to create a large central park space, which tends to have a welding effect socially — resulting in the production of high land values.

The community objectives of this property are well located with a view to distributing land value and increasing the total land value, except in the locations of the stores, which would be undoubtedly more economic located along the car-line margins of the property, since in their present location they depress values from the residential standpoint.

The street system facilitates fairly well the approaching of the car-line objectives, although there seems to be a need of more streets running to the easterly car lines. The community objectives are very conveniently reached from nearly all house sites, which is a large economic advantage, and materially increases the individual site value.

The diagonal thoroughfare, and the two other cross thoroughfares are, as we have shown heretofore, disadvantageous in a residential area.

Plan No. 18, by Brazer and Robb

The intensity of house site, is surprisingly great, considering the very excessive provision made for community features. It seems also to be largely accomplished without the use of the multiple dwellings with northerly exposures. It also creates a high economic value through its splendid block treatment, with very liberal interior playgrounds, and with its architectural arrangement of building location. The fact, however, that this design would cost 75 per cent more than the Chicago standard quarter-section makes it of doubtful economic advantage, as far as the average Chicago family is concerned. If, however, a less liberal treatment of the community objectives was provided, nearly 1500 house sites could be provided in this general scheme, and so perhaps be made economically justifiable.

The distribution of community objectives, except for the position of the four rows of stores, within the property, would tend to create a high economic advantage from this standpoint.

The street system is highly efficient economically, from the standpoint of conveniently reaching the internal objectives, but is unsatisfactory from the standpoint of conveniently reaching the external objectives. In so far as it encourages through traffic on the diagonals, and on some other streets, it is economically unsatisfactory.

Plan No. 19, by Marcia Mead

The intensity of land development is secured at an excessive cost and a very high percentage of street area. The design contains 986 lots, of an average dimension of 33 x 100 feet. It is commendable that this intensity is accomplished while, at the same time, each plot is provided with an interior playground.

The distribution of community objectives is economically good, since it tends to create the largest land value at a point most distant from the intersection of car lines, which has the largest nucleus of land values to start with.

Probably the amount of space assigned to these objectives would be found to be economically excessive, and a slightly wider distribution to be more advantageous for increasing the total land value of this area.

The use of stores at the point most distant from the intersection of the car-line, as well as in a social center, is decidedly disadvantageous, and, therefore, would cause a very definite loss in possible land value. The street system has the economic merit of simplicity, which means convenience and efficiency in getting between the different parts, and is equally convenient from the standpoint of making all house sites very convenient to the social center.

EXPLANATION OF THE TABLES

The tables (pp. 134-137) are worked up and based on the following assumptions:

First. All marginal streets are supposed to have been fully developed so that the figures in the tables do not include any sidewalk, street pavement, curb, parking, lot frontage, or any other item for the marginal streets.

Second. All streets where curbing has been shown have been assumed to have an 18-inch gutter on both sides of the streets or adjacent to any curbs shown, so that in order to obtain the full street area within the curb lines the linear feet of curbing shown in the table must be multiplied by 1½ feet, reduced to sq. yds. and added to the amount or area of street paving shown in the tables.

Third. All park areas listed in the table include the parking or planting strips along the streets, all playgrounds or other open spaces, and the gross area of all lots containing buildings of a public nature; no deductions have been made for the areas of the buildings.

Fourth. The item of "sidewalks" includes all sidewalks along the streets and such walks as deflect from the streets to afford access to the fronts of houses or lots. The item "highways" or "pavement" includes all streets and any roads deflecting from them to afford access to house or lot fronts.

Fifth. The item of service roads includes all walks or drives not specified in the preceding paragraph.

Sixth. The marginal streets were taken to be 60 feet wide * in all cases and the total area used for obtaining the percentages of the various items was 2580 feet by 2580 feet or 739,600 sq. yds.

Seventh. All of the data for the tables were obtained by scaling large photographs of the plans with the exception of No. 20, the plan submitted by Mr. Pope, the data for which were taken from the original drawing.

TABLE I. The various quantities were obtained as above described and were listed under the proper headings.

TABLE II. The cost of the paving was taken as the mean of the costs furnished by Mr. C. D. Hill, Engineer of the Board of Local Improvements of the City of Chicago. All of the other items were calculated from the costs as furnished by Mr. Hill with the exception of the cost of parking which was taken from the records of cost in the writer's office. The column headed "Rel. Costs" shows the total cost of the various schemes as compared with the Standard Quarter Section cost.

TABLE III. The area used as a basis for the calculations in this table was 739,600 sq. yds., which was derived by taking a sixty foot marginal street from the full quarter section, or in other words by subtracting a strip 30 feet wide from the entire perimeter, leaving a square 2580 feet by 2580 feet.

The various items were obtained by dividing the area calculated for each item by the total area under consideration.

TABLE IV. The first three columns were obtained by counting the lots shown on the photographs, and in cases where the lot lines were not distinctly shown, the number of lots were obtained by assuming the same frontage as for the adjacent sections of the layout. The next three columns were obtained by scaling from large photographs.

The column headed "Av. Front. Inside" was obtained by dividing the number of lots facing the streets lying within the rear lot lines of the marginal streets into the scaled frontages within the same limits.

The column headed "Av. Front. Total" was obtained by dividing the total lot frontage by the total number of lots in each scheme.

TABLE V. The first three columns were obtained by dividing the total area found for each of the items by the total number of lots in each scheme.

The fourth column is the sum of the first three columns.

The fifth column was obtained by assuming the cost of the unimproved land to be $2,500.00 per acre and from this the unimproved value of each lot was found by using the areas shown in column four.

The sixth column was obtained by dividing the total improvement cost as shown in Table II, col. 7, by the total number of lots in each scheme.

The seventh column is the sum of the fifth and sixth.

TABLE VI. The first six columns were obtained by dividing the totals of the various items for each of the schemes by the corresponding totals found for the Standard Quarter Section.

The seventh column was obtained by adding the Pavement, Gutter, and Sidewalk areas in every case and dividing the totals for the various schemes by the total found for the Standard Quarter Section, the idea of this column being to show the relative areas devoted to the public and transportation uses of the community for the convenience and intercourse of the people. The eighth column was obtained by adding the areas found for the Parks, Playgounds, Open Spaces, and Service Roads in all cases and dividing the totals found for the various schemes by the total of the Standard Quarter Section. The theory of this column is that by separating the houses by means of these various portions of the layout, the general health and comfort of the community will be promoted by affording more light and air to each house and at the same time giving space for recreation in the parks and playgrounds. The Service Roads were included for the reason that in most cases they bound the parks or playgrounds and so can and should be considered as forming a part of them and in other cases where they do not bound the parks, etc., they separate the houses and lots and so tend to give a greater social value to the property.

KEY TO NUMBERS OF PLANS IN THE TABLES

S. Chicago Standard Quarter Section
1. Wilhelm Bernhard
2. Arthur C. Comey
3. Albert Lilienberg and Mrs. Ingrid Lilienberg
4. Riddle and Riddle
5. Albert Sturr
6. Robert Kingery
7. Edgar H. Lawrence
8. Charles Tirrell
9. G. C. Cone
10. Phelps Wyman
12. Anderson and Reecer
13. Louis H. Boynton
14. Wm. H. Schuchardt
15. Morrell and Nichols
16. Charles H. Ramsdell
17. Alfred B. Yeomans
18. Brazer and Robb
19. Marcia Mead
20. Robert Anderson Pope

*The actual width of the marginal or boundary streets of the quarter section is 66 ft. The 60 ft. width used by the author does not, however, in any way invalidate his comparative figures.—The Editor.

TABLE I

QUANTITIES

Plan No.	Paving Sq. Yds.	Curbs and Gutters Lin. Feet	Curbs and Gutters Sq. Yds.	Sidewalks Sq. Yds.	Service Roads Sq. Yds.	Parks and Play Sq. Yds.	Sewers Lin. Feet
S	72,639	49,038	8,173	32,456	.....	50,332	18,480
1	81,063	49,930	8,322	29,622	10,618	212,136	20,000
2	54,088	56,220	9,370	34,268	8,462	147,539	23,000
3	70,412	66,006	11,001	49,190	25,570	141,901	29,425
4	82,598	51,230	8,539	26,541	40,196	58,238	23,700
5	52,583	45,754	7,615	26,294	.....	168,161	22,300
6	64,097	63,460	10,577	42,996	1,889	226,267	19,500
7	44,435	47,930	7,988	7,808	4,543	166,543	27,100
8	48,248	41,530	6,922	25,303	.....	236,436	20,000
9	60,436	52,729	8,788	34,648	48,468	135,419	22,610
10	84,942	48,400	8,067	29,800	44,489	161,870	28,490
12	80,241	53,760	8,960	38,555	28,191	117,863	27,000
13	78,634	82,363	13,727	30,707	.....	104,448	34,440
14	106,608	59,796	9,966	41,867	13,278	78,533	22,960
15	87,804	36,991	6,165	19,966	29,090	147,747	20,080
16	80,226	54,622	9,103	29,571	26,800	154,014	20,900
17	78,859	59,706	9,951	26,963	15,085	273,387	23,200
18	116,604	69,500	11,583	36,959	25,587	300,996	21,640
19	112,082	54,511	9,085	39,235	4,633	215,986	24,615
20	55,928	36,477	6,080	29,896	29,150	271,414	16,184

TABLE II

GROSS COSTS OF IMPROVEMENTS

Plan No.	Paving $1.77 Sq. Yds.	Curb & Gutters $0.75 Lin. Ft.	Sidewalks $1.35 Sq. Yd.	Service Road $1.25 Sq. Yd.	Parks & Play $0.20 Sq. Yd.	Sewers $1.50 Lin. Ft.	Total Cost	Rel. Costs
S	128,571.03	36,778.50	43,815.60	.....	10,066.40	27,720.00	246,951.53	1.00
1	143,481.51	37,447.50	39,989.70	13,272.50	42,427.20	30,000.00	306,618.41	1.24
2	95,735.76	42,165.00	46,261.80	10,577.50	29,507.80	34,500.00	258,747.86	1.05
3	124,629.24	49,504.50	66,406.50	31,962.50	28,380.20	44,137.50	345,020.44	1.40
4	146,198.46	38,422.50	35,830.35	50,245.00	11,647.60	35,550.00	317,893.91	1.29
5	93,071.91	34,315.50	35,496.90	.....	33,632.20	33,450.00	229,966.51	0.93
6	113,451.69	47,595.00	58,044.60	2,361.25	45,253.40	29,250.00	295,955.94	1.20
7	78,649.95	35,947.50	10,540.80	5,678.75	33,308.60	40,650.00	204,775.60	.83
8	85,398.96	31,147.50	34,159.05	.....	47,287.20	30,000.00	227,992.71	.93
9	106,971.72	39,546.75	46,774.80	60,585.00	27,083.80	33,915.00	314,877.07	1.28
10	150,347.34	36,300.00	40,230.00	55,611.25	32,374.00	42,735.00	357,597.59	1.45
12	142,026.57	40,320.00	52,049.25	35,238.75	23,572.60	40,500.00	333,707.17	1.35
13	139,192.18	61,772.25	41,454.45	.....	20,889.60	51,660.00	314,968.48	1.28
14	188,696.16	44,847.00	56,520.45	16,597.50	15,706.60	34,440.00	356,767.71	1.45
15	155,413.08	27,743.25	26,954.10	36,362.50	29,549.40	30,120.00	306,142.33	1.24
16	142,000.02	40,966.50	39,920.85	33,500.00	30,802.80	31,350.00	318,540.17	1.29
17	139,580.43	44,779.50	36,400.05	18,856.25	54,677.40	34,800.00	329,093.63	1.33
18	206,389.08	52,125.00	49,744.65	31,983.75	60,199.20	32,460.00	432,901.68	1.75
19	198,385.14	40,883.25	52,967.25	5,891.25	43,197.20	36,922.50	378,246.59	1.53
20	98,992.56	27,357.75	40,359.60	36,437.50	54,282.80	24,276.00	281,706.21	1.13

TABLE III PERCENTAGES

Plan No.	Pavement	Curbs and Gutters	Sidewalks	Service Roads	Parks and Playgrounds	Private Lots
S	9.822	1.105	4.388	.....	6.805	77.880
1	10.960	1.125	4.005	1.435	28.682	53.793
2	7.313	1.267	4.633	1.144	19.948	65.694
3	9.520	1.487	6.651	3.457	19.186	59.699
4	11.168	1.154	3.589	5.435	7.874	70.780
5	7.110	1.031	3.555	.....	22.737	65.567
6	8.666	1.430	5.813	.255	30.593	53.243
7	6.008	1.080	1.055	.614	22.518	68.725
8	6.524	.936	3.421	.....	31.968	57.151
9	8.171	1.188	4.685	6.553	18.309	61.094
10	11.485	1.091	4.029	6.015	21.886	55.494
12	10.849	1.211	5.213	3.812	15.936	62.979
13	10.632	1.856	4.152	.....	14.122	69.238
14	14.414	1.347	5.661	1.795	10.618	66.165
15	11.872	.834	2.700	3.933	19.977	60.684
16	10.847	1.231	3.998	3.624	20.824	59.476
17	10.662	1.345	3.646	2.040	36.964	45.343
18	15.766	1.566	4.998	3.460	40.697	33.513
19	15.154	1.228	5.305	.626	29.203	48.484
20	7.562	.822	4.042	3.941	36.697	46.936

TABLE IV LOT DATA

Plan No.	No. Lots Inside	No. Lots Marginal	No. Lots Total	Frontage Inside	Frontage Marginal	Frontage Total	Av. Front Inside	Av. Front Total
S	1,344	192	1,536	33,600	4,800	38,400	25.00	25.00
1	1,064	203	1,267	33,785	5,160	38,945	31.76	30.73
2	887	268	1,155	33,515	9,100	42,615	37.78	36.90
3	1,086	336	1,422	31,355	8,070	39,425	28.87	27.72
4	728	260	988	23,615	8,580	32,195	32.43	32.58
5	753	199	952	31,750	8,420	40,170	42.16	42.19
6	647	130	777	28,800	4,800	33,600	44.51	43.24
7	992	232	1,224	43,240	9,040	52,280	43.58	42.71
8	943	299	1,242	29,315	9,490	38,805	31.08	31.24
9	842	225	1,067	40,655	8,300	48,955	48.27	45.88
10	776	284	1,060	31,420	8,280	39,700	40.49	37.45
12	826	246	1,072	28,790	6,940	35,730	34.85	33.33
13	1,000	384	1,384	43,000	7,920	50,920	43.00	36.79
14	1,008	230	1,238	28,290	5,940	34,230	28.06	27.65
15	549	228	777	25,774	7,910	33,684	46.95	43.35
16	384	210	594	23,655	7,620	31,275	61.60	52.65
17	1,056	285	1,341	30,105	5,790	35,895	28.51	26.77
18	736	236	972	23,580	5,740	29,320	32.04	30.16
19	800	186	986	33,550	7,520	41,070	41.93	41.65
20	724	259	983	24,044	7,888	31,932	33.21	32.48

TABLE V DISTRIBUTION OF AREAS AND COSTS

Plan No.	Highway Area Per Lot, Sq. Ft.	Park & Play Per Lot, Sq. Ft.	Average Lot, Sq. Ft.	Area Chargeable to Each Lot	Land Cost Per Lot	Impr. Cost Per Lot	Total Cost Per Lot
S	664	294	3,375	4,333	$248.71	$160.71	$409.42
1	921	1,507	2,826	5,254	301.58	242.00	543.58
2	827	1,158	3,778	5,763	330.80	224.02	554.82
3	989	898	2,505	4,392	252.10	242.63	494.73
4	1,438	530	4,768	6,736	386.65	321.75	708.40
5	818	1,589	4,584	6,991	401.28	241.56	642.84
6	1,384	2,621	4,561	8,566	491.69	380.89	872.58
7	476	1,224	3,737	5,437	312.08	167.30	479.38
8	583	1,713	3,063	5,359	307.61	183.57	491.18
9	1,285	1,142	3,811	6,238	358.06	295.10	653.16
10	1,420	1,374	3,484	6,278	360.36	337.35	697.71
12	1,309	989	3,910	6,208	356.34	311.29	667.63
13	800	679	4,299	5,778	331.66	227.57	559.23
14	847	571	3,557	4,975	285.57	288.18	573.75
15	1,657	1,711	5,199	8,567	491.75	394.00	885.75
16	2,207	2,300	6,767	11,274	647.13	536.26	1183.39
17	878	1,835	2,250	4,963	284.88	245.41	530.29
18	1,766	2,787	2,295	6,848	393.08	445.37	838.45
19	1,506	1,971	3,273	6,750	387.45	383.61	771.06
20	1,108	2,485	3,178	6,771	388.66	286.58	675.24

TABLE VI RELATIVE AREAS AND COSTS

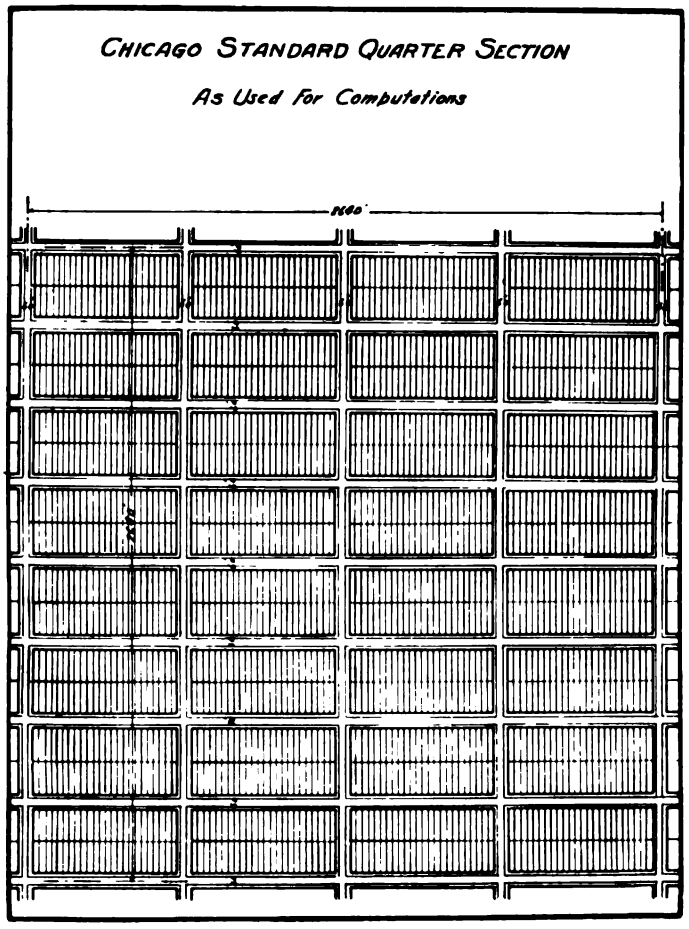
Plan No.	Highways	Parks and Playground	Total Lot Area	Land Charge Per Lot	Impr. Charge Per Lot	Total Charge Per Lot	Economic Factor	Social Factor
S	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	1.106	4.21	.691	1.212	1.506	1.359	1.047	4.425
2	.785	2.93	.843	1.330	1.394	1.362	.860	3.101
3	1.007	2.82	.767	1.013	1.509	1.261	1.149	3.327
4	1.127	1.16	.909	1.554	1.946	1.532	1.035	1.955
5	.744	3.34	.842	1.613	1.503	1.570	.764	3.341
6	.924	4.49	.683	1.976	2.370	2.173	1.035	4.533
7	.649	3.31	.882	1.254	1.041	1.148	.530	3.399
8	.683	4.69	.734	1.236	1.142	1.189	.708	4.697
9	.857	2.69	.784	1.439	1.836	1.638	.914	3.653
10	1.151	3.22	.712	1.449	2.099	1.774	1.080	4.091
12	1.103	2.34	.809	1.433	1.904	1.669	1.124	2.904
13	1.143	2.07	.889	1.334	1.416	1.375	1.083	2.075
14	1.442	1.56	.849	1.148	1.793	1.471	1.394	1.824
15	1.163	2.93	.779	1.977	2.451	2.214	1.002	3.513
16	1.105	3.06	.764	2.602	3.337	2.970	1.046	3.592
17	1.099	5.43	.582	1.145	1.527	1.336	1.018	5.731
18	1.586	5.98	.430	1.580	2.771	2.176	1.453	6.489
19	1.499	4.29	.623	1.558	2.387	1.973	1.411	4.383
20	1.068	5.39	.602	1.562	1.783	1.649	.810	5.971

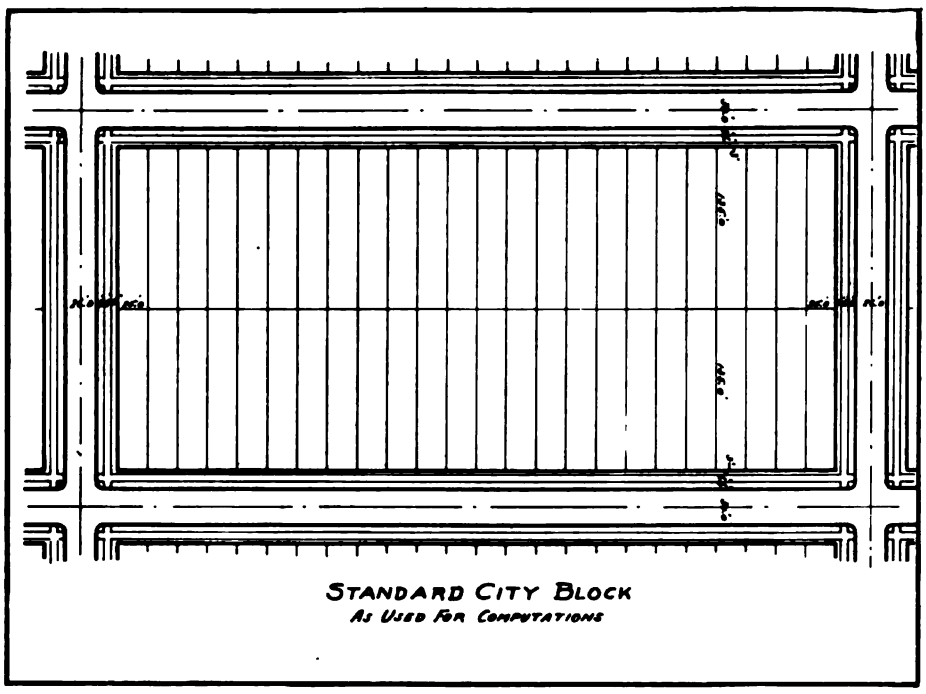
TABLE VII — COSTS PER SQUARE FOOT OF LOT AREA

Plan No.	Highways		Parks and Playgrounds		Service Roads		Sewers	Private Lots	Total Costs
	Land	Improve.	Land	Improve.	Land	Improve.			
S	.0113	.0403	.0050	.0019	....	....	.0054	.0574	.1213
1	.0172	.0617	.0306	.0119	.0015	.0037	.0084	"	.1924
2	.0105	.0421	.0174	.0067	.0010	.0024	.0079	"	.1454
3	.0170	.0606	.0185	.0071	.0034	.0080	.0111	"	.1831
4	.0129	.0468	.0064	.0025	.0044	.0106	.0075	"	.1485
5	.0102	.0373	.0207	.0080	....	....	.0080	"	.1416
6	.0172	.0618	.0330	.0128	.0003	.0007	.0083	"	.1915
7	.0068	.0273	.0188	.0073	.0005	.0012	.0088	"	.1281
8	.0112	.0417	.0329	.0127	....	....	.0080	"	.1639
9	.0132	.0475	.0172	.0066	.0061	.0149	.0083	"	.1712
10	.0172	.0614	.0232	.0088	.0062	.0150	.0116	"	.2008
12	.0157	.0559	.0145	.0056	.0035	.0084	.0096	"	.1706
13	.0138	.0526	.0138	.0045	....	....	.0112	"	.1533
14	.0134	.0659	.0092	.0035	.0016	.0038	.0071	"	.1619
15	.0146	.0520	.0189	.0073	.0037	.0090	.0074	"	.1703
16	.0155	.0563	.0198	.0078	.0035	.0085	.0079	"	.1768
17	.0198	.0731	.0468	.0181	.0026	.0062	.0115	"	.2355
18	.0382	.1382	.0697	.0270	.0059	.0134	.0146	"	.3634
19	.0264	.0963	.0356	.0138	.0008	.0019	.0118	"	.2440
20	.0152	.0534	.0448	.0173	.0048	.0116	.0078	"	.2123

TABLE VIII — RENTAL AND CARRYING CHARGES

Plan No.	Total Cost of Lot	Cost of House	Total Cost House and Lot	Annual Charge 10% of Cost	Monthly Charge	Relative Monthly Charge	Monthly Ch'g. per $100 Orig. Cost of House
S	409.42	1800	2209.42	220.94	18.41	1.000	0.833
1	543.58	"	2343.58	234.36	19.53	1.060	"
2	554.82	"	2354.82	235.48	19.62	1.065	"
3	494.73	"	2294.73	229.47	19.12	1.038	"
4	708.40	"	2508.40	250.84	20.90	1.135	"
5	642.84	"	2442.84	244.28	20.35	1.105	"
6	872.58	"	2672.58	267.26	22.27	1.209	"
7	479.38	"	2279.38	227.94	18.99	1.031	"
8	491.18	"	2291.18	229.12	19.09	1.037	"
9	653.16	"	2453.16	245.32	20.44	1.153	"
10	697.71	"	2497.71	249.77	20.81	1.130	"
12	667.63	"	2467.63	246.76	20.56	1.117	"
13	559.23	"	2359.23	235.92	19.66	1.068	"
14	573.75	"	2373.75	237.38	19.78	1.074	"
15	885.75	"	2685.75	268.58	22.38	1.215	"
16	1183.39	"	2983.39	298.34	24.86	1.350	"
17	530.29	"	2330.29	233.03	19.42	1.055	"
18	838.45	"	2638.45	263.85	21.99	1.194	"
19	771.06	"	2571.06	257.11	21.43	1.164	"
20	675.24	"	2475.24	247.52	20.63	1.120	"


CHICAGO STANDARD QUARTER SECTION
As Used for Computations
1320'
1320'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